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EDITORIAL NOTE

The Editors are pleased to present this unusually full number of the BULLETIN, which contains contributions on varied archaeological and philological subjects, as well as lists of the publications of the Schools. The Fifty-eighth Annual Report of the President, which would normally have appeared in this number, is scheduled for the February BULLETIN, along with the reports of the Directors of the Schools in Jerusalem and Baghdad.

MORE INSCRIBED JAR HANDLES FROM EL-JÎB

JAMES B. PRITCHARD

Five jar handles inscribed with archaic Hebrew letters were found during the 1959 season of excavation at el-Jib.[1] Four of these, nos. 57, 59, 60, and 61, are similar in size and shape to the 56 inscribed handles which came from the débris that filled the great pool excavated during the seasons of 1956 and 1957; their inscriptions also conform to the previously known formulae.[2] However, one new handle, no. 58, is unique, in that it is broad and thin in section—the usual cross section of the inscribed handles is oval—and its inscription does not follow any of the well established patterns.

The new handles came from areas that lie within a radius of 28 m. from the rim of the large pool at el-Jîb. Four of them, nos. 57, 58, 59, and 60, were found within the industrial area, which seems, from the rock-cut installations of tread basins or presses, pits, and storage cellars, to have been a center for the production of wine.[3] Thus the discovery of the four inscribed jar handles within the industrial area north and northwest of the pool serves to identify this particular area as that from which the filling within the pool had come. This newly established provenience for the large collection of 56 inscribed handles found within the pool considerably strengthens the suggestion, arrived at on other grounds, that they belong to wine jars. The archaeological context of the new handles throws little light on the problem of their date. It was impossible to associate them with building levels or phrases, since no complete rooms with well established floor levels were found within the shallow layer of débris which covered the rock of the industrial area. Nos. 57 and 59 came from débris containing prodominately Iron II sherds; no. 58 appeared with Iron Age surface pottery; and no. 60 came from an area where only mixed sherds were found. No. 61, however, appeared in an area southwest of the pool, where there were several building phases; but, since it lay only 30 or 40 cm. below the surface, no connection could be established between it and the building which was found below.

In the following descriptions of the handles, which are shown both in photography and in drawings made by tracing the inscription on plastic drawing paper stretched over the curved surface of the handle, the form

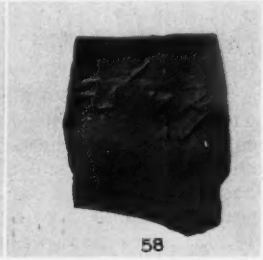
[1] For preliminary reports on the 1959 campaign of the University Museum in cooperation with the American Schools of Oriental Research see: *Expedition: the Bulletin of the University Museum of the University of Pennsylvania*, Vol. 2: 1 (1959), pp. 17-25; *The Biblical Archaeologist*, Vol. 23 (1960), pp. 23-29; and a summary which includes the 1959 material, *Congress Volume, Oxford, 1959, Supplement to Vetus Testamentum* (1960), pp. 1-12.

[2] The writer's *Hebrew Inscriptions and Stamps from Gibeon* in *Museum Monographs* (1959); see critical reviews by N. Avigad, *Israel Exploration Journal*, Vol. 9 (1959), pp. 130-133; H. Michaud, *Vetus Testamentum*, Vol. 10 (1960), pp. 102-106; Ray L. Cleveland (reporting also views of W. F. Albright) in *American Journal of Archaeology*, Vol. 64 (1960), p. 87; W. F. Albright, BULLETIN 159, p. 37.

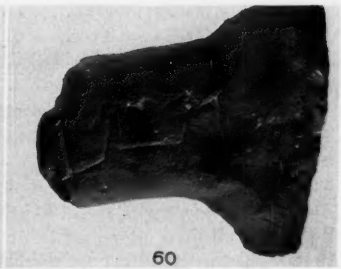
[3] See *Illustrated London News*, Sept. 10, 1960, pp. 433-435, for evidence found at el-Jîb for the wine industry.

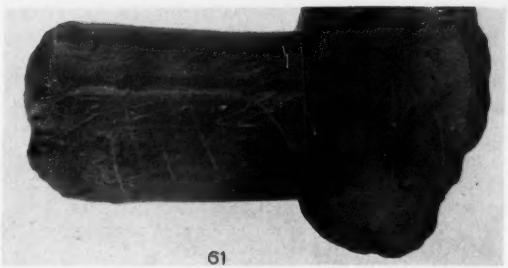
of presentation used in the previous publication is followed. A diagonal stroke indicates the presence of a word divider; round brackets or parentheses denote the neck of the jar, or portion of it, to which the top of the handle was attached. "Up" means that the writing on the handle begins at the end attached to the shoulder of the vessel and continues

57


58

59


60


61

toward the neck. The provenience is given according to the grid at el-Jib; the field numbers are given; and the designation "Phila." indicates that the object is now to be found at the University Museum of the University of Pennsylvania, Philadelphia. The references to nos. 1-56 are to the numbers by which the handles from the 1956-1957 seasons are presented in the writer's *Hebrew Inscriptions and Stamps from Gibeon* (1959). All were inscribed after firing.

57. *ḥnnyhw / nr'*. 8 F 4, 55-80 cm. deep. Up. Pink clay. Deeply incised on single-ridge handle. The uneven surface has made writing difficult. Vertical strokes of *ḥ* extend beyond the horizontal ones, as in nos. 35 and 50. The second *n*, mostly effaced by a break in the surface of the clay, is connected to the first *n* by a stroke, which can only be a slip of the scribe. The long strokes of *h* and ' are in keeping with the flowing style of the Hananiah handles; see nos. 32, 38, and 50. The *r* is written with a short tail. The horizontal strokes of ' come closer together at the right than at the left; but see nos. 37 and 38. Phila. Field no. 718.

58. *m . . lyh*. 8 J 5, surface. Up. Pinkish buff clay. Deeply incised on thin, broad handle, 1.4 cm. thick and 3.9 cm. wide. The *m* is clearly cut, but there is an extension of the right end of the horizontal stroke and of the lower end of the vertical stroke at the left. In the space between *m* and *l* there is room for two letters. A very tentative suggestion is *m*[*gd*]*lyh*[*w*], a name with a formation similar to *mgdl'l* in Josh. 19: 38. From the taper of the handle at the right it is unlikely that much, if anything, could have preceded *m*. Phila. Field no. 702.

59. [*gb'*]*n / gdr*(. 8 F 5, 70 cm. deep. Up. Buff clay. Small letters deeply cut. The combination of heavy cutting, word divider, and blank space after *gdr* suggests that this belongs to the Hananiah group (or possibly Azariah); cf. no. 32. Phila. Field no. 769.

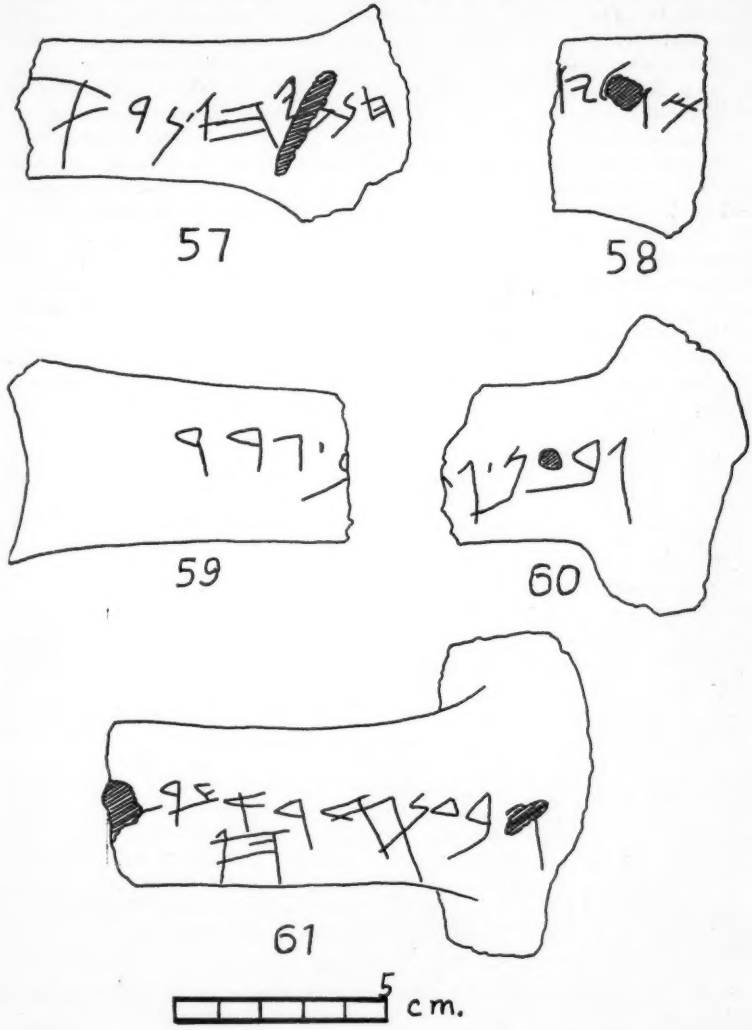
60. *gb'n / g*[*dr*]. 8 D 4, 60 cm. deep. Up. Buff clay. Deeply incised. The lower parts of the *b* and *n* turn sharply to the left; cf. no. 31. The center of the ' fell out in the cutting of the inscription. Phila. Field no. 827.

61. *gb'n gdr 'mr*[*y*]*hw*. 17 G 20, 30-40 cm. deep. Up. Pink clay. Letters lightly scratched. The scribe, following the pattern of Amariah handles in which one handle contains the entire formula, found it necessary to write the final two letters, *hw*, below the line. The long tails usually given to letters in the Amariah class, as in nos. 14, 16, 17, and 18, appear here also. Phila. Field no. 849.

Two of these handles provide some new evidence for determining the reading of the word *gdd/r*, which frequently follows *gb'n*. On the basis of no. 8, discovered in 1956, I read *gdd*, but in the light of the material from the 1957 campaign I decided in favor of the reading *gdr*.[4] Avigad has indicated his preference for my first reading[5] on the palaeographical ground of the length of the tails for the letters *d* and *r*. Since the *r* " was never written with a short tail in the 21 cases where it occurs in other contexts on the handles, but always has a pronounced long leg " he concludes that the third letter, written with a short tail in 13 of the 19 instances in which it appears in this combination, can only be intended for a *d*. Michaud[6] has called attention to the possibility that the form of the head in the letters *d* and *r* is as important a criterion as the length of the tail. " Le trait qui permet de les distinguer est, soit la longueur

[4] *Hebrew Inscriptions*, p. 9.
[5] *Israel Exploration Journal*, Vol. 9, p. 131.
[6] *Vetus Testamentum*, Vol. 10, p. 105.

de la haste, soit la forme de la tête. Si l'un des traits disparaît, l'autre apparaît." As Michaud has pointed out, in nos. 14 and 25, although the



tails of the second and third letters of the word are of the same length, the heads are formed quite differently. Yet in no. 19 the distinction

between the second and third letters is achieved by a difference in the length of the tails, not in the shape of the heads. Two of the new inscriptions support this argument of Michaud. In no. 61 the second letter of the word *gdd/r* has been made with an upper horizontal stroke which extends to the right of the vertical and a lower which does not connect with the vertical; while the third letter has a head which is a neatly formed isosceles triangle. Although the tails of the two letters are of approximately equal length it is obvious that the scribe intended to differentiate between the two. To a lesser degree the intended distinction seems to be evident in no. 59, where the head of the second letter of the word is considerably longer and sharper than the third. These examples of the writing of what was evidently a much used label make it clear that the scribes intended to portray something other than the same letter in the second and third positions and that this differentiation was achieved frequently by a different formation of the head and occasionally by the length of the tail. It may be noted further that the lengths of the tails in other letters vary considerably; the *g* of no. 59 is short, while the two *g*'s in no. 61 are considerably longer. It would seem to the writer that the reading of *gdr* is considerably strengthened by the new evidence and is to be preferred.[7]

THE SEVENTH SEASON AT DOTHAN

Joseph P. Free

The Dothan Archaeological Expedition staff of nine members moved from Jerusalem to Dothan on March 31, 1960, to begin the seventh season of excavating under the co-direction of the writer and his wife, Mrs. Ruby Free. The main aims of the 1960 season were to uncover additional parts of the tenth-ninth century B. C. administrative building of the Solomonic era (L area),[1] to excavate more of the eighth-seventh century B. C. levels of the periods before and after the Assyrian invasion of 724-721 B. C., and to excavate the Late Bronze—Iron I tomb which had been opened just four days before the close of the previous season (1959). These aims were accomplished, including the discovery of a thousand objects in the Late Bronze—Iron I tomb[2]—lamps, bowls, chalices, pyxis jars, bronze dishes, spears, daggers, and several unusual pieces described below (Figs. 2, 3). Other discoveries on the slope area included further Early Bronze Age levels above the tomb, another section of the Middle Bronze Age city wall, and from the top areas a seventh

[7] [On the reading Gibeon-Gedor as the name of a district in the territory occupied by the Gibeonites (I. Chron. 8: 31, 9: 36) see Bulletin 159, p. 37—W. F. A.]

[1] See Bulletin 156, pp. 22-24, and Fig. 1, p. 23.

[2] In last year's report (1959), Bulletin 156, p. 22, the tomb was listed as "Iron I." With the further excavation of the tomb this season and the uncovering of a thousand objects in contrast to fifty last year, it is clear that the tomb was used also in Late Bronze times.

century B. C. ostracon in Aramaic cursive hand, as well as several large grain storage bins.

During the fifth and sixth seasons (1958, 1959), the L area administrative building of the Iron II period yielded many jars, all of the same size, 96 in one room and dozens more in other rooms.[3] The presence of these standard measures suggested that this was a center for collecting taxes in wheat, oil, and other commodities.[4] The question still remained, however, as to what was done with the wheat after it was collected in the storage jars. The answer came in the current season's excavation (1960), with the discovery of several storage bins. In the ninth century B. C. level[5] we uncovered a bin[6] nearly ten feet in diameter (2.85 meters) and over six feet deep (1.95 meters). In the eighth century B. C. level[7] we found another bin over 14 feet in diameter (4.40 meters) and nearly 8½ feet deep (2.50 meters). A few meters distant, also in the eighth century B. C. level,[8] a third storage bin was discovered, measuring eight feet in diameter (2.45 meters) and over seven feet deep (2.20 meters). Toward the end of the season, several meters to the northeast of the administrative building, a fourth storage bin was unearthed,[9] over 14 feet in diameter (4.30 meters) and 9 feet deep (2.75 meters) at the maximum point of the surviving stone wall. One is reminded of similar Iron II storage bins found at Megiddo.[10]

These Dothan storage bins date primarily from the ninth to the seventh centuries B. C., though some may have been originally constructed in the tenth century B. C. and used down through the years. They are all in the immediate peripheral area of the tenth-ninth century B. C. area L administrative building, which was rebuilt and re-used in the ninth-eighth centuries B. C.

The main walls of the tenth-ninth century administrative building discovered in the previous two seasons averaged nearly four feet (113 cms.) in thickness and the partition walls 27 inches (70 cms.) for main rooms and two feet (60 cms.) for smaller rooms.[11] Partition walls were uncovered this season to the south and east of the main part of the building; one measured two feet (60 cms.) and another 27 inches (70 cms.).[12] Several meters farther to the south, heavier main walls were uncovered, measuring over three feet in thickness (95 cms.) in the east-west wall and a meter thick in the north-south wall.[13] These fragmentary

[3] For these storage jars, see BULLETIN 152, p. 12 and Fig. 1; also BULLETIN 156, pp. 22-23.

[4] *Ibid.*

[5] This is level 3 of our 1959 revision (level 1-A of preliminary numbering of levels); see BULLETIN 156, pp. 28-29. Level 3 represents the rebuilding of the Solomonic administrative building of level 4 (tenth-ninth century B. C.).

[6] In sub-area L-104-114.

[7] In sub-area L-6, partly in L-16, level 2.

[8] In sub-area L-7.

[9] In L-48, L-58, M-41, M-51.

[10] *Megiddo I*, p. 66.

[11] BULLETIN 156, p. 23. For photo of some of walls uncovered in 1959, see *ibid.*, Fig. 1.

[12] In sub-area L-114.

[13] In sub-area L-123.

main walls represent the farthest extension of the administrative building to the south yet discovered.

Parts of the stone floor pavement of this tenth-ninth century B. C. administrative building (level 4) still remained in the area excavated this season. There was abundant ash above it,[14] which gave further evidence of the burning of the building in the late ninth (or early eighth) century B. C., perhaps during an Aramaean invasion similar to the ones of the days of Benhadad or of Hazael (II Kings 10: 32). Dating from this period we found in one sub-area [15] four whole objects on the floor level: a flat dish, two bowls, and a jug, all of thin ware datable to Iron II.

Further evidence of the rebuilding and re-use of the administrative building (level 3) in the late ninth or early eighth century B. C. came in the discovery of a plaster floor [16] about one foot (27 cms.) above the level of level 4. Level 4 is the level of the original main construction of the administrative building.

In level 2, to the east of the administrative building, we found a number of house walls dating to the eighth century B. C. They represented the city of the eighth century which fell in the same period as Samaria, 721 B. C. (II Kings 18: 9-10). One house, on "Thirty-seventh Street" [17] (sub-area L-37), contained ten rooms. Adjacent to the street, a stone paved courtyard, 6½ x 13 feet (2 x 4 meters), led to a small room (room 5) measuring 6½ x 8 feet (2 x 2.50 meters). In it were two storage jars. It served as an entry room into a long narrow room, room 4, which measured 6½ x 27 feet (2 x 8.30 meters). This long room was plainly a kitchen, for in it we found an oven (*ṭābûn*), cooking pots, bowls, storage jars, and five grindstones. Returning to the stone paved court, one entered on the south the largest room of the house (room 7), which measured 13 x 19 feet (4 x 5.75 meters), from which doors led to two other rooms: No. 6, 7′ 3″ x 4½ feet (2.20 x 4.45 meters), and No. 10, 8 x 11½ feet (2.40 x 3.50 meters). The other rooms fell within the general size range of those already mentioned.

On the third side of the courtyard of this L-37 house, the walls were badly destroyed and robbed, but enough remained to indicate that this is the type of house often found in the eighth century B. C., which was built around three sides of a court, with the fourth side bounded only by a wall. In this case, the fourth side or entry side of the L-37 house was on "Thirty-seventh Street," separated from the street only by the wall of the courtyard. In our previous year's season (1959) we found similar house arrangements, with rooms on three sides of a court, as in the "house of the plaster court" [18] in the eighth-seventh century B. C. level. This house plan appears to reflect Assyrian influence, as noted in the article by Ruth Amiran and I. Dunayevsky, cited in our article on the "Sixth Season at Dothan." [19]

[14] In sub-area L-114 and floor sounding in L-114-104.
[15] In sub-area L-123.
[16] In sub-area L-123.
[17] "Thirty-seventh Street" is 6½ feet wide (2 meters) and has been excavated for a distance of 30 feet (9 meters).
[18] See BULLETIN 156, p. 24.
[19] *Ibid.*, note 9.

In level 1, the rebuilding of Dothan after the time of the destruction of Samaria in 721 B. C., we found that a number of the house walls of level 2 in the L-37 and adjacent areas had been re-used. In these houses of the late eighth and the seventh centuries B. C., where enough of the floor plan was recovered, it appeared that they also were built around three sides of a court. In several cases a larger room had been cut in two in the rebuilding,[20] implying that there was a crowding and need for more rooms in the post-invasion days after the Assyrian conquest of the land in 724-721 B. C.

The doorways of the houses in levels 1 and 2 varied in width from 75 to 80, 85, and 90 cms., comparable to the variance which we have in doors today, ranging from 26 to 32 inches, and sometimes as much as 36 inches. Most of the rooms in the houses in levels 1 and 2 had plaster floors, with stone paved courts.

We found two jar burials this season, similar to the three found in last year's excavation (1959)[21] and to the one discovered farther east in our second season (1954).[22] Burial No. 1 of this season[23] was in a storage jar two feet high (60 cms.) with a typical eighth century B. C. vertical collared rim. The jar was found lying down, as in all other jar burials we have found at Dothan. The head of the infant was to the east, at the base of the jar, and with the fragmentary skeleton there were nine beads and an iron bracelet.

The second jar burial[24] was oriented with the mouth of the jar to the north, the base to the south. Most of the small bones had turned to dust, but three teeth and small arm and leg bones remained. A small iron bracelet was around the arm bone. Most of the jar burials have been found in level 2 (eighth century B. C.), which would imply the burial to have been made in the level 1 period (late eighth-seventh century B. C.), by level 1 people digging into level 2. Since this was the time of the Assyrian conquest and occupation of the Northern Kingdom, it is possible that these are Assyrian child burials. The jars are regularly typical eighth-seventh century B. C. type with vertical collared rims.

Among the objects of levels 1 and 2, in addition to the two jar burials just described, the most significant single find was an ostracon in level 1 from a storage jar,[25] bearing the three letters . . R Š B . . As to the date, the pottery in level 1 points to the rebuilding after 721 B. C., with a main occupation from about 700-650 B. C., possibly continuing a little later. Upon the discovery of this ostracon we airmailed a photo of it to W. F. Albright in Baltimore for his evaluation. By return airmail he wrote: "The new ostracon is in a characteristic seventh century Aramaic cursive hand. The characters are very well formed and resemble most closely the letters on the Calah Aramaic list of names from the first half of the seventh century. . . . Certainly the script is in full (though scarcely

[20] Room 15 and room C.
[21] BULLETIN 156, p. 26.
[22] BULLETIN 135, p. 18; *Biblical Archaeologist*, XIX: 2 (May, 1956), p. 46 and Fig. 11.
[23] In sub-area L-26.
[24] In sub-area L-27.
[25] In sub-area L-26.

needed) agreement with your pottery dating. It again illustrates the conquest of North Israel by Aramaic after the Assyrian conquest." We plan to publish this ostracon in a future issue.

In level 2 (eighth century B. C.), the most significant objects were two copper dishes with vertical sides, slightly curved. We also found a number of fibulae, plough points, and the usual grindstones, spindle whorls, and so forth. Already noted in level 4 (tenth-ninth century B. C.) were the four whole thin vessels.[26] Some 234 objects, partial and whole, were found in the stratification in the Iron Age levels on top of the mound.

On the middle slope of the mound we uncovered another section of the Middle Bronze Age city wall, first discovered in our fifth season of excavating in 1958.[27] This year's dig also gave indication that this city wall was re-used in Late Bronze times and very likely in Iron I as well. Again this season several storage jars just inside this city wall gave evidence of an occupation level, with re-use of the city walls following Middle Bronze Age times.

On the lower slope, the main operation this season was the excavation of the Late Bronze—Iron I tomb (Tomb 1), first discovered last season (1959), just four days before the end of the excavation. In 1959 we had been able to remove enough of the fallen ceiling of the tomb to enter about a meter into the tomb and recover some fifty objects, chalices, lamps, bowls, pyxis jars, and other objects, most of them complete and many intact, all typical of the earlier part of Iron I (1200-1100 B. C.). Last season we had gone through nearly 17 feet of stratification before reaching the stone lined pit which led further down to the vertical square cut shaft in bedrock on which the tomb opened.[28]

This season we started ten feet farther up the slope and dug an area ten feet (3 meters) wide and over 33 feet (10 meters) long in order to come down on top of the fallen ceiling in order to reach the contents of the tomb with as little disturbance as possible. It was necessary to go through 22 feet (6.80 meters) of stratification to reach the fallen ceiling, which had evidently been shattered by an earthquake and had fallen on the contents of the tomb. It may have been the same earthquake which cracked the cisterns we discovered in the same part of the slope of the *tell* during the fifth season (1958).[29] Most of the stratification above the tomb was Early Bronze, showing that the people of the later second millennium B. C. who dug this tomb had chipped their way into the native bed-rock beneath the earlier levels of the Early Bronze period of 3000-2000 B. C.

The first two weeks were spent digging through the 22 feet of stratification to reach the fallen ceiling and the remaining weeks in uncovering a thousand objects (Fig. 1). Most of the fifty objects found in the previous season were from the upper level, typical twelfth century Iron I.[30] This

[26] See note 15.
[27] Wall 2 of the 1958 season on the slope; see BULLETIN 152, pp. 14, 15, and Fig. 3.
[28] BULLETIN 156, p. 27.
[29] BULLETIN 152, p. 17.
[30] BULLETIN 156, p. 25 and Fig. 2; also pp. 27-28.

season, with the more complete excavation of the tomb, we found a considerable number of Late Bronze objects from the thirteenth and fourteenth centuries B. C., particularly in the lower levels of the tomb.

The mass of objects in the tomb fell into four general levels, as follows, beginning with the earliest chronologically:

Level 4: dated to Late Bronze IIA (1400-1300 B. C.), based on Cypriote and Mycenaean ware, including a complete Cypriote "milk bowl," another Cypriote bowl with wishbone handle, six "bilbils," six

FIG. 1. Level 1 of Late Bronze-Iron I tomb (Tomb 1) in which a thousand objects were discovered during the seventh season at Dothan. The doorway is at the top of the photograph, the crypt with skeleton at far right.

stirrup cups (false spouts). Other objects included 56 lamps, 27 pyxides, 24 jugs, 40 bowls, 18 pots, 15 chalices, and 3 pilgrim flasks.

Level 3: dated to Late Bronze IIB (1300-1200 B. C.), based on the continued use of Cypriote and Mycenaean ware, including two stirrup cups. Other objects included 31 lamps, 44 pyxides, 47 jugs, 38 bowls, 18 pots, 13 chalices, 7 flasks, and a funnel. Level 3 was separated from level 4 by a stratum of earth and limestone. In this period the tomb was widened by the addition of a crypt on the north wall and another on the south wall.

Level 2: dated to Late Bronze IIB and Early Iron I (Transition, 1200 B. C.), based on the presence of both Late Bronze and Early Iron I pottery types. Level 2 was separated from level 3 by a thin layer of limestone, resulting from either partially fallen ceiling or limestone chips

from reworking of tomb. Objects in level 2 included 70 lamps, 59 pyxides, 50 jugs, 54 bowls, 12 pots, 13 chalices, 3 flasks, 4 craters, 2 *zîrs*, and a funnel.

Level 1: dated to earlier part of Iron I (1200-1100 B. C.), based on Iron I type lamps, bowls, pyxides and other pottery. Objects in level 1 included 48 lamps, 43 pyxides, 34 jugs, 37 bowls, 4 pots, 12 chalices, 1 flask, 3 craters, and a jar stand. Level 1 was separated from level 2 by a layer of disintegrated limestone and limestone chips.[31]

Totals of pottery objects in the tomb included 205 lamps, 173 pyxides, 155 jugs, 169 bowls, 52 pots, 53 chalices, 14 pilgrim flasks, 8 craters, 5 *zîrs*, 8 stirrup cups, 6 bilbils, 3 funnels,[32] a Cypriote "milk bowl," another Cypriote bowl with wishbone handle; all of these, together with some not mentioned, total 916 pottery vessels.

Some fifty bronze objects were found in the tomb, including parts of 12 bowls, 7 spear points, 18 daggers, 1 knife, 6 rings, 2 pairs of tweezers, a hairpin, and 3 miscellaneous. Of other materials there were four scarabs, 4 spindle whorls, a seal with a gazelle head inscribed, and a miniature hammer of bone, scarcely 3 inches long.

There was an abundance of skeletal remains, often fragmentary. Using the skull as a criterion, 84 skeletons could be distinguished, with 14 in level 4, 17 in level 3, 26 in level 2, and 27 in level 1. In many places the bone material of many skeletons was fused into a solid mass, making it impossible to tell how many more dozen skeletons had been entombed here.

The presence of the weapons, 25 daggers and spear points,[33] make it likely that at one period it was the tomb of a warrior. From the abundance and date of the objects and the successive stratification, it appears that the first burial was made in the fourteenth century B. C., and then from time to time the tomb was opened and re-used during the three centuries until about 1100 B. C.

Fortunately in the final week of the excavation we came to the stone floor of the tomb, after removing 989 objects. But on the vertical face to the east there were more than a score of objects protruding, making a total of over a thousand uncovered this season. We left the protruding objects for another season,[34] erected a masonry wall against the vertical face to protect it, and in the future will again come down from above to recover, we hope, the remainder of the tomb. Projecting the curve of the side of the tomb, we estimate that we have uncovered two-thirds

[31] It is of course quite true that in the re-use of a tomb, some objects may be pushed over so that they are out of true stratification. While this may have happened to some extent in the Dothan tomb No. 1, it was still evident that for the most part the earlier objects were in the lower levels.

[32] The funnels fitted every one of the 173 pyxides, which ranged from the smallest to the largest in size. Since there was approximately the same number of pyxides (173) as lamps (205) one wonders whether the pyxides were the oil containers for the lamps.

[33] Three of the daggers still had fragmentary parts of the wooden handles attached, another had a bone handle, and two spear points had wood in the hole for the shaft.

[34] There was no point in removing the protruding objects—that merely exposed more objects behind them. One couldn't win!

of the tomb and that another third remains. Actual excavation will tell whether there is more or less than we anticipate.

The part of the tomb now uncovered is 23 feet wide (7 meters) and so far is 12 feet (3.70 meters) from the door to the vertical face on the east. This latter dimension will be increased with further excavation. When we started excavating the tomb, no stairs were evident, but now that we have gone through the four levels of objects and reached the floor, there are seven steps down from the shaft into the tomb. With the continued use of the tomb from generation to generation, the level rose to the top of the steps. In conclusion, further significant finds in the tomb not already mentioned include two ring flasks (cf. Fig. 2), a zoomorphic pitcher in the shape of a cow, a bronze metal lamp in the shape of a pinched lip pottery lamp, and three seven-spouted pottery lamps (cf. Fig. 3)—the latter providing further answer to the idea that this is a late concept.[35]

The 1960 season included the writer and his wife, Mrs. Ruby Free, as co-directors. Professor Robert Cooley of Springfield, Missouri, was again this year in charge of drafting and directed the excavation of the Late Bronze—Iron I tomb (Tomb 1). Area supervisors included Mrs. Free, Professor Cooley, Mr. Robert Bason of Fuller Theological Seminary, Dr. Arnold Schultz, Professor of Old Testament at Northern Baptist Seminary, Chicago, and Miss Dorothy Wolf, student at Wheaton College. Sherd recording was shared by Miss Carla Schultz, student at Baylor University in Texas, and Miss Swidlonna Uglianitza, teacher in Evanston, Illinois. The staff photographer was again Mr. Austin Hale. Assistant supervisors included Miss Schultz, Miss Uglianitza, and Mr. Hale. Mr. 'Abd el-Latif Kadoumi of the Jordan Department of Antiquities served as goverment observer and assistant. Pottery sorting and classification was handled by the director, assisted after digging hours by the rest of the staff. During this season we found nearly a quarter of a million sherds. The last two weeks Mr. Ralph Franklin of Los Angeles, California, joined the staff and gave valuable help to Professor Cooley in the tomb excavation and to Mr. Hale in the photography. Mrs. Schultz arrived the last week and worked day and night with the rest of the staff in completing the final object record books.

Visitors included the American School of Oriental Research; Dr. and Mrs. Marvin Pope and Dr. and Mrs. James L. Kelso; the French School, led by Père de Vaux and Père Lemoine; Mr. Joseph Saad of the Palestine Museum, and members of the Jordan Department of Antiquities. In the absence of Dr. Awni Dajani, who was in America, the division of finds was supervised by Mr. Diya ed-Din Rifai, Acting Director of Antiquities, and Mr. Hasan Awad.

In summary, the seventh season resulted in uncovering more of the Iron Age levels on top of the mound: level 1, 8th-7th century B. C.; level 2, 8th century B. C.; level 3, 9th-8th century B. C.; and level 4, 10th-9th century B. C.[36] On the slope we uncovered more of the Middle

[35] Cf. W. F. Albright, *Archaeology of Palestine and the Bible* (1935), p. 159.

[36] For probable connections between these levels and Biblical history, see BULLETIN 156, pp. 28-29.

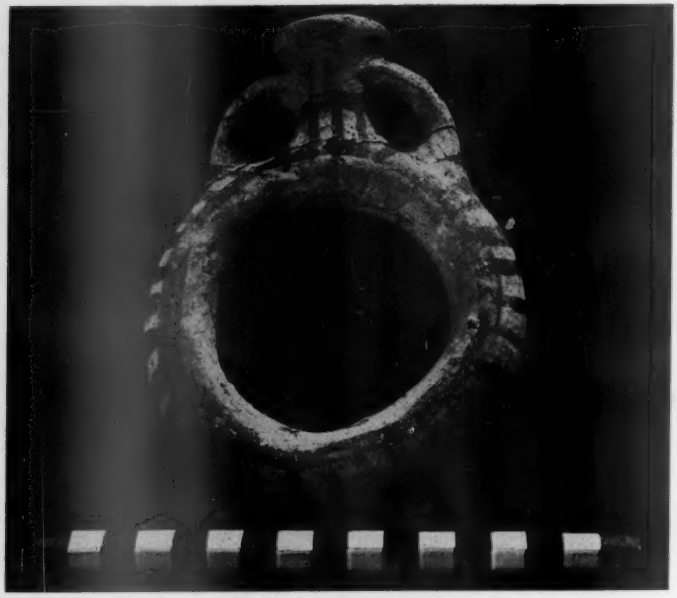


FIG. 2. Ring flask from Tomb 1, level 3.

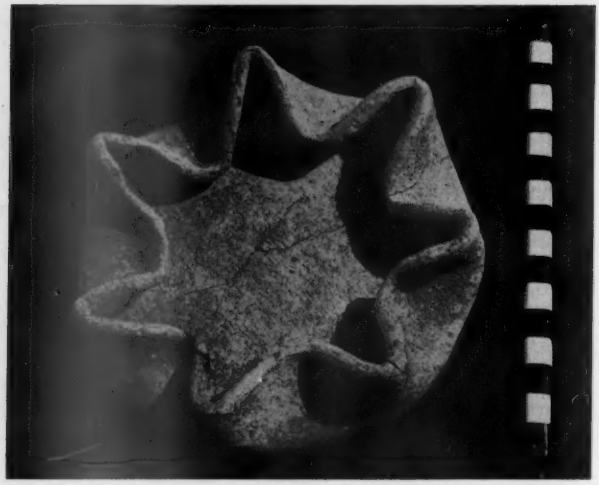


FIG. 3. Seven-spouted lamp from Dothan, Tomb 1 (Late Bronze-Iron I), level 3.

Bronze Age city wall, and on the lower slope, the Late Bronze—Iron I tomb, first used in the 14th century B. C. and re-used until the 11th century B. C. The fallen ceiling was five feet thick (1.50 meters), representing tons of weight. The wonder is that a third of the one thousand objects were intact, and the other two-thirds, though cracked or broken, were in most cases complete.

SOME IMPORTED POTTERY AT KHOR RORI (DHOFAR)*

HOWARD COMFORT

Four sherds, representing three imported vases, were found at Khor Rori (ancient Sumhuram) in Dhofar (Oman), in the lowest level of excavation just inside the northwest corner of the city wall. Nos. 1/2 and 3 were found on the same day in the same level of the same area; no. 4 was found in the next level of the adjacent area. All of them represent the earliest occupational debris of the city, which was founded not later than the first Christian century as a colony of the Kingdom of Hadhramaut.

Further exploration must determine the chronological and causal relationships between the destruction of Timna', capital of the Kingdom of Qataban, and the founding of Khor Rori, for doubtless both phenomena are specific illustrations of Van Beek's general principle that "frankincense and myrrh, with their promise of wealth and economic advantage, greatly affected the political history of South Arabia, and in large part determined the rise and fall of the various South Arabian states." [1] Timna' was destroyed sometime after A. D. 10—perhaps coevally with the Julio-Claudian, or even the Flavian, Roman dynasty; the emergence of Khor Rori could have been one phase of either the causes or the effects of the fall of Qataban, but it could hardly have been altogether unrelated. As will be suggested below, Khor Rori was importing Mediterranean pottery early in the first century A. D.

Van Beek [2] refers to Hellenistic and Roman imports as evidence for the prosperity of Timna' and, by inference, of all South Arabia. This is fair enough; such evidence cannot be overlooked. But, to go no farther than ceramics of the Roman period, the quantity from Timna', and still more from Khor Rori, is not comparable to the quantity from Arikamedu-

* Dr. Ray L. Cleveland, Director of the excavations conducted in 1960 under the auspices of the American Foundation for the Study of Man, has kindly furnished me with the fragments for study and with much background information regarding the site and the circumstances of the excavation. [See BULLETIN 159, pp. 14-26.] I am also especially indebted to Dr. Frances Follin Jones, whose profound and generously shared knowledge of Hellenistic-Roman ceramics is the most important ingredient of this note. I also express gratitude for the hospitality of the Institute for Advanced Study, where these observations have been composed, and to Dr. Wendell Phillips of the American Foundation for the Study of Man for generous contribution to the expenses of the photographic cuts.

[1] G. W. Van Beek, "Frankincense and Myrrh," *Biblical Archaeologist* XXIII (1960), pp. 70-95; citation on p. 95.

[2] *Ibid.*, pp. 89-91.

Virampatnam, near Pondichéry on the east coast of India.[3] The explanation of the discrepancy may lie in nothing more mysterious than the relative extent of the areas excavated in India and in South Arabia, but it may also lie in some more significant ancient circumstance such as a more favorable attitude toward foreign business representatives, or even an actually higher degree of prosperity, as well as of cosmopolitanism, in India than in South Arabia. Here again further investigation is necessary; the present point is merely that it would be premature to infer that constant, heavy and profitable export of frankincense and myrrh from South Arabia was answered by constant and heavy infiltration of artifacts from the Mediterranean—even as casual souvenirs, to say nothing of their being articles of bazaar-commerce.

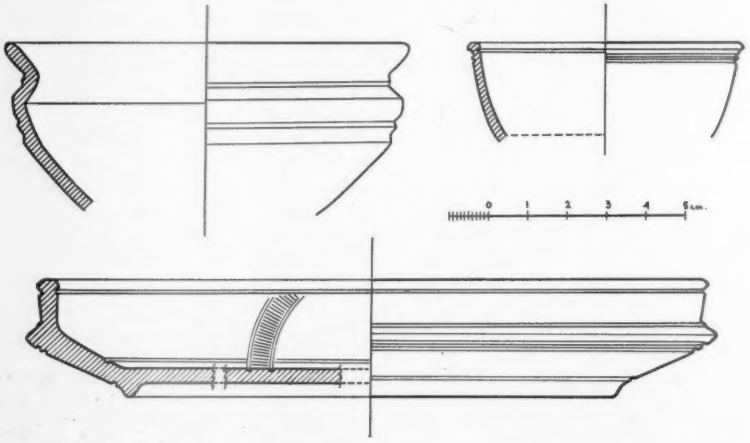


FIG. 1.

Since Sumhuram was a seaport, probably to be connected with the Moscha of the *Periplus Maris Erythraei*, the obvious presumption is that any importation would have come by sea. However, Van Beek has shown that "at no time was there one single incense route, as most of the explorers of Arabia have assumed. We must reckon in all periods with the use of several routes on both land and sea."[4] There is thus merely a strong probability, but less than a certainty, that any object imported into Khor Rori had been funnelled through Alexandria as a transhipment point.

Sherds 1/2 (Fig. 1, below). Although these two pieces do not actually join, their surface, biscuit and proximity make it a virtual certainty that they originally belonged to the same piece, 2.5 cm. high and 17 cm. wide with a slightly everted

[3] Wheeler, "Arikamedu," *Ancient India* 2 (1946), pp. 17-124; Casal, *Fouilles de Virampatnam-Arikamedu* (1949).

[4] Van Beek, *op. cit.*, pp. 75-82, and especially the map, Fig. 5 (p. 90).

rim between two flanges. Just below the upper of these flanges there is a light groove; below and inside the lower flange there is a pair of more pronounced grooves (Fig. 2). The bottom thickens as the exterior surface descends to the foot, which is low and bevelled inward on the under side. The upper flange serves also as a

FIG. 2.

FIG. 3.

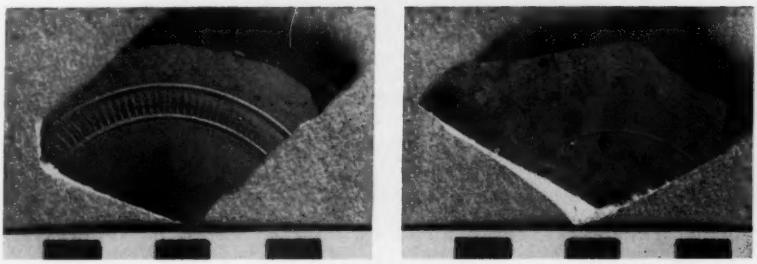


FIG. 4.

lip which rounds over to the inner side, at which point there is another pronounced groove; below this, the inner wall descends almost vertically until it makes a sharp inward bend, from which point the floor of the plate descends gently toward the center (Fig. 3). Toward the edge of the floor is another groove, and toward the center, *i. e.* on the second fragment, there are two more with rouletting between them (Fig. 4, left). At the center there was probably a potter's stamp.

The surface is glossy red terra sigillata *Glanztonfilm* [5] of high quality; it has

[5] A term devised by a group of German specialists to avoid such ambiguous words as "glaze," "engobe," "varnish," etc.; Schleiermacher, *Germania* 33 (1955), p. 416.

worn away on prominent parts like the flanges, but is otherwise preserved. Specifically, it is not much worn on the resting surface of the foot, which implies a brief period of use. The biscuit is a lighter orange-red than the surface, but is not buff or yellowish like that of some Hellenistic sigillata. It is highly micaceous, especially in the diagonal fractures, which tend toward flakiness.[6]

The technique of manufacture certainly involved the wheel for the application of the grooves and rouletting, and there are traces of wheel-work on the exposed inner and outer surface also, though the texture as a whole is exceedingly smooth like that of Arretine ware. The situation on the unexposed surface, *i. e.* the underside within the foot-ring, is entirely different; here the circular wheel-marks are far more apparent and the *Glanztonfilm* lacks the lustre of the smooth upper surface (Fig. 4, right). This phenomenon of contrast, which is also a regular feature of Arretine ware, has not attracted much scholarly attention, and the present context is not the place for extended speculations on its cause; but clearly there was a difference in the wheel-treatment given to different parts of the surface of the better quality of Roman-period vases.

The micaceous clay identifies this plate as "Samian," and its fine work qualifies it as Robinson's "Samian B."[7] The shape is a standard form, though close published parallels are not as common as might be supposed.[8] The date is about the turn of the era, with a balance of probability later rather than earlier. It was manufactured somewhere along the Anatolian coast or on the off-shore islands, possibly Samos (though Technau, "Griechische Keramik im samischen Heraion," *Ath. Mitt.* 54 1929 48-53, shows nothing like our plate), under strong influence from Italy; it was distributed on a highly selective basis which excluded Antioch almost wholly, but included Italy on its periphery.[9] Despite the absence of plates like ours from Pagenstecher, *op. cit.*, the published signatures show that "Samian B" was common in Alexandria, and the cup signed ΕΩΝ/ΤΟΥ at Timna' is also of this ware.[10] As we have seen, this piece probably passed through Alexandria *en route* to Khor Rori.

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[6] This description almost precisely fits Zahn's account of his "Klasse A" ("Samian") ware in Wiegand and Schrader, *Priene*, p. 430: "Der Thon . . . ist . . . lebhaft rotbraun, etwa zimmetfarben. Er ist stark mit Glimmer durchsetzt, der weniger im senkrechten Bruche der Scherben als bei schrägen Absplitterungen zum Vorschein kommt. Bei diesen zeigt sich auch am besten die eigentümliche, wohl durch die Glimmerteilchen hervorgebrachte schuppige Struktur des Thones. Der Ueberzug ist schön gelbrot, er ist mitunter abgesprungen. Die Stücke zeigen feinste Scheibenarbeit ohne Anwendung einer Form." However, his further description on pp. 440-441, especially the "farblose, durchsichtige Schicht" and the water-absorption test, is apparently not applicable.

[7] H. S. Robinson, *The Athenian Agora V: Pottery of the Roman Period* (*Chronology*), p. 12, note 9.

[8] Heberdey, *Ephesos I*, p. 174, no. 63 (with signature broken away) is a satisfying parallel; Zahn in *Priene*, Fig. 550: 133, and several plates from "South Russia," Olbia, and the Vogell Collection signed EPMHC, KOIPA/NOY, OPH/OY and EPMA which are recorded in Zahn's notes but which I believe to be unpublished, are also good parallels. Knipowitsch, *Die Keramik römischer Zeit aus Olbia* illustrates something of the kind on Pls. I: 1b (her "Gattung B") and II: 19a ("Gattung D"), but the feet are different; Waagé, *Antioch IV 1*, Pl. V: 415-425 shows similar shapes in "Pergamene" ware, but the feet are more pronounced than on ours; Reisner, Fisher and Lyon, *Harvard Excav. at Samaria*, Fig. 185: 4b is similar, but Crowfoot and Kenyon, *Samaria-Sebaste III: The Objects*, Fig. 79: 14-16 ("Form 14, deep plate with vertical rim: rim moulded, flange at junction with base") is disappointing in the descriptions of surface and biscuit, and only partially convincing as regards form. Since "Samian" of any kind is not common at Tarsus or in the dated Agora deposits, the absence of this shape on these sites is not surprising; but it is odd that Pagenstecher, *Exp. v. Sieglin* contains nothing helpful.

[9] Zahn, *op. cit.*, pp. 444-446.

[10] Comfort, in Bowen, Albright, et. al., *Archaeological Discoveries in South Arabia*, p. 204.

Sherd 3 (Fig. 1, upper right). This fragment of a rim is difficult to identify with assurance. Its diameter, *ca.* 7 cm., is hardly large enough for a plate like, for instance, Knipowitsch, *op. cit.*, Pl. I 3; it may have been a cup like *ibid.*, Pl. I 9. It has a small lip below which there are two grooves on the outside and one groove on the inside; the wall curves gently downward and inward, and at its extreme lower edge the sherd seems to have a sharp inward turn which I interpret as the transition to a more or less horizontal floor (Fig. 5); conceivably, however, it might be merely the ridge of constriction on a version of the Gaulish Form Dragendorff 27,[11] which was occasionally imitated (or perhaps initiated?) in the Eastern Mediterranean.[12] An objection to the latter interpretation lies in the apparently usual omission of the lip-moulding in the East, though it was standard in Gaul; but there is no question of this piece itself being Gaulish.

The fabric is notably thin and fine, *i. e.* early; there are no traces of mica, and the fractures are sharp and vertical through the wall without evidence of flakiness.

FIG. 5.

The color is slightly less yellow than that of Sherds 1/2. We are thus not concerned with "Samian" ware. The *Glanztonfilm* is of high quality and adherent except on prominent parts; it has crazed extensively on the inside of the lip and on the whole outer surface—perhaps in connection with a secondary burning.

Dr. Jones does not recognize the shape or the fabric as falling among the Eastern group of wares. Nor does the contour suggest any of the standard Italian shapes. This latter situation, however, is not really decisive; autopsy in museums reveals many shapes which did not reach the Augustan-Tiberian Roman camp at Haltern in Westphalia and which, consequently, do not appear in Loeschcke's organization of sigillata forms.[13] Our fragment may have originated in Italy. In any case it belongs to the best period, and it is contemporary with Sherds 1/2 with which it was found.

Sherd 4 (Fig. 1, upper left). This sherd is a wholly different ware from either of the foregoing. It is part of a cup imitating Loeschcke's Form 8, with a rather strongly concave rim 10.3 cm. in diameter. The only decoration is a shallow, comparatively wide groove just below the rim; rouletting at the upper and lower edges of the rim has been omitted. The *Glanztonfilm* is notably lacking in *Glanz*; it is

[11] Dragendorff, "Terra Sigillata," *Bonn. Jahrb.* 96 (1895), Pl. I.

[12] For instance, Technau, *op. cit.*, Fig. 40; Waagé, *op. cit.*, Pl. V: 450f-p in "Pergamene" ware.

[13] *Mitt. d. Altert.-Komm. v. Westfalen* 5 (1909), Pl. X.

thin, poor stuff unevenly applied and not at all adherent (Fig. 6). In fracture, the biscuit seems to show two layers which vary slightly in intensity of color—an evidence of poor firing; the outer is about the same as that of Sherd 3, and the inner is a trifle lighter. The fracture seems coarser than that of Sherd 3, though the clay itself is reasonably free of megascopic inclusions. Wheel-marks are conspicuous on both the inner and outer surfaces.

The shape is related to Waagé's 453, 455, 457 and 460, of which the last is "perhaps the most common single shape in Early Roman 'Pergamene' pottery."[14] This shape and its near relatives in various varieties of sigillata and non-sigillata fabrics are found on most Roman sites; Arikamedu-Virampatnam presents an especially interesting case relevant to Khor Rori. Wheeler, *op. cit.*, fig. 8, and Casal, *op. cit.*, pl. XIX A, left, show several examples of a shape which Wheeler describes as a copy of Dragendorff 24/25, typically a small bowl with vertical rouletted rim below which is a flange and the wall curving downward toward the bottom. But the

Fig. 6.

Arikamedu version tends toward an everted rim, borrowed perhaps from a Loeschcke 8 like our Khor Rori example. This latter, however, has a conical wall, like the norm for the type. The Arikamedu cups, then, are a kind of contamination of Loeschcke's Form 8 (rim) and Dragendorff's Form 24/25 (body). Wheeler describes them as "hard greyish buff ware with polished surface, differing in fabric sufficiently from the local wares to make it reasonably certain that they were imports," although he risks no conjecture as to their source. Quite apart from the difference in shapes between the Arikamedu and Khor Rori cups, this description makes it clear they are not the same ware and that neither of them is a close parallel to the other; nevertheless, there is an *air de famille* about them.

It is strange that South Arabia should have its share of Eastern Mediterranean ceramics,[15] while the Mediterranean ceramics of Arikamedu are apparently exclusively Arretine. Doubtless South Arabia was in contact with Gaza and Syro-Palestine by caravan or in other ways which were inoperative *vis-à-vis* India, as one would expect especially of inland cities like Timnaʿ, but this still leaves us without an explanation of why the ships from Egyptian ports which dropped off "Samian B" ware at Khor Rori apparently never carried any of it farther on to India! Once more, further exploration may remedy our present ignorance.

[14] *Antioch IV 1*, p. 34, Pl. V; cf. Jones, *Tarsus I*, p. 244, notes 56, 57 for some additional references.

[15] For Timnaʿ, see Comfort, *op. cit.*

A UGARITIC ABECEDARY AND THE ORIGINS OF THE PROTO-CANAANITE ALPHABET

FRANK MOORE CROSS, JR.
THOMAS O. LAMBDIN

Advances in the decipherment of Proto-Canaanite texts during the past twelve years [1] together with the discovery of the el-Khaḍr arrowheads in 1953 [2] have furnished definitive evidence that the conventional Phoenician alphabet [3] evolved directly from the Proto-Canaanite pictographic script. Twelve of the most frequent signs can be traced in detail through their evolution from transparent pictograph to Phoenician letter in deciphered contexts.[4] Five others, whose pictographs remain more or less obscure, can also be traced from pictograph to conventional sign, making a total of some seventeen of twenty-two signs whose historical typology is now clear.[5] With the establishment of this evolution, there appears to be no escape from the conclusion that the Proto-Canaanite alphabetic system has its beginnings in an acrophonically devised script under direct or indirect [6] Egyptian influence, somewhere in Syria-Palestine. Further, it was reasonable, if not necessary, to argue on the basis of these data that the names of the individual signs, and probably the order of the signs as well, went back in principle to the time of the origin of the script at the end of the Middle Bronze Age.

The discovery of abecedaries at Ugarit, the first recognized specimen

[1] See W. F. Albright, "The Early Alphabetic Inscriptions from Sinai and their Decipherment," BULLETIN 110 (1948), pp. 6-22; and F. M. Cross, "The Evolution of the Proto-Canaanite Alphabet," BULLETIN 134 (1954), pp. 15-24. A further series of advances toward the decipherment of these texts is made in a forthcoming paper of Albright which he kindly showed the writers in draft in the spring of 1958.

[2] J. T. Milik and F. M. Cross, "Inscribed Javelin-heads from the Period of the Judges," BULLETIN 134, pp. 5-15; Albright, "Some Observations on the New Material for the History of the Alphabet," BULLETIN 134, p. 26.

[3] The term "alphabet" will be used for convenience, but without prejudice to the question of the precise character of the Proto-Canaanite writing system. Gelb uses the term "syllabic" to describe it, as opposed to "alphabetic" or "proto-alphabetic" (*A Study of Writing* [Chicago, 1952]). Gelb's stress on the continuity of Proto-Canaanite with earlier writing systems is not without merit. On the other hand, his theoretical interest in terminology, as well as his simplistic description of Egyptian, has beguiled him into giving insufficient attention to the novelty of the Proto-Canaanite system. The simplification involved in devising a script to represent by a single sign a consonant plus any vowel (and we should contend, a consonant plus "zero vowel"), was a revolutionary innovation. No close historical analogies are available. The Proto-Canaanite system spread steadily throughout the ancient world and preempted the need for a second, parallel invention. Hence, the mode of the system's development, based on acrophony, went unrecognized by Gelb, who gave more attention to remote analogies drawn from different types of writing systems than to concrete epigraphic data.

[4] Cf. Cross, BULLETIN 134, Figs. 1 (p. 16) and 2 (p. 19); and esp. p. 24, n. 32.

[5] *Ibid.*

[6] *E. g.*, by way of the Pseudo-hieroglyphic syllabary of Byblos, on which see the forthcoming paper of H. Sobelman in *JSS*.

appearing in the excavations of 1949,[7] indicated that the traditional order of the signs had been fixed no later than the fourteenth century B. C. The fact that both archaic (non-Ugaritic) elements and local adaptations are recognizable in the order[8] suggest that the ordering is considerably older, and was well established by that time.[9] The antiquity of the names of the letters can be argued on the ground that order and names are necessarily connected.[10] Directly, the early date of the names of the letters is supported by the survival of remnants of the names in scripts which early split away from the Canaanite or Phoenician scripts.[11] The obvious example is the Greek alphabet which was borrowed—letters, names, and order—toward 800 B. C. Remarkably, little attention has been given to Ethiopic. There can be no doubt that the Ethiopic names were taken over with the alphabet from Old South Arabic, and in turn, that the primitive names preserved through South Arabic go back to the time when that script branched apart from the parent Proto-Canaanite. The names included are *'alf, bêt, gaml, dent* < **dilt*,[12] *waw(ê), kaf, may, nahâs* (also *naḥas*) < Can. *naḥaš, 'ayn, ṣaday, qâf* < Can. *qôp, re's*, and *taw(e)*, to give only clear instances. The name *ḥarm* is almost certainly original, secondarily lost in Phoenician and derivative scripts.[13] We have argued elsewhere on the basis of the el-Khaḍr material and other palaeographic data, that it is now possible to fix the date of the divergence of the Proto-Arabic script from the Proto-Canaanite in the fourteenth, or at latest the early thirteenth century B. C.[14] There is evidence, therefore, that names as well as order of the signs were already in use in the fourteenth century B. C., in the era before the pictographs had been conventionalized in the Proto-Canaanite script. It is only a short step in time back to the origin of our script.

In 1955, an abecedary of special type appeared at Ugarit.[15] It lists in parallel vertical columns the Ugaritic signs and cuneiform syllabic

[7] See now the principal publication (with bibliography) in *Le palais royal d'Ugarit* II [*MRS* VII] (Paris, 1957), pp. 199-203, Pls. I, II.

[8] Cf. the excellent study of E. A. Speiser, "A Note on Alphabetic Origins," BULLETIN 121 (1951), pp. 17-21.

[9] On the abecedary from the Wâdī Ḥammāmât, see now W. K. Simpson, "Historical and Lexical Notes on the New Series of Hammamat Inscriptions," *JNES* 18 (1959), pp. 35 f.

[10] Cf. W. F. Albright, "Some Important Recent Discoveries: Alphabetic Origins and the Idrimi Statue," BULLETIN 118 (1950), p. 13; G. R. Driver, *Semitic Writing* (2nd ed., London, 1954), p. 156.

[11] The classical study of the names of the letters is T. Nöldeke, "Die semitischen Buchstabennamen," *Beitr. z. sem. Sprachwissenschaft* (Strassburg, 1904), pp. 124-136; See now G. R. Driver, *Semitic Writing*, pp. 152-179; and, most recently, W. W. Hallo, "Isaiah 28 9-13 and the Ugaritic Abecedaries," *JBL* 77 (1958), pp. 324-338.

[12] *Dant* also appears; cf. Nöldeke, *op. cit.*, p. 132.

[13] Cf. Cross, BULLETIN 134, p. 24, n. 32. The Proto-Canaanite pictograph corresponds with the meaning of the name (loops of cord); the later linear symbols in OSA and Eth. give no basis for the secondary development of the name. Finally, it cannot derive from alternate tendencies creating secondary names, rhyme formation or breakdown of name.

[14] Cross, BULLETIN 134, p. 22; cf. Albright, BULLETIN 118, p. 13, esp. n. 8. Cf. Driver, *op. cit.*, pp. 144-148.

[15] *Le palais royal d'Ugarit* II, Pl. II; cf. pp. 201-203.

signs which were meant to transcribe the Ugaritic. Unfortunately, the bottom of the tablet is lost so that only the beginning of the text (obverse, containing ten Ugaritic signs) and end (reverse, preserving ten signs) is known at present. The text is transcribed by the editor as follows: [16]

'a	a	[	]
b	be	[p]	[p]u
g	ga	ṣ	ṣa
ḫ	ḫa	q	qu
d	di	r	ra
h	ú	ṯ	ša
w	wa	ǧ	ḫa
z	zi	t	tu
ḫ	ku	'i	i
ṭ	ṭí	'u	u
[	]	ś	zu

The scribe who prepared the tablet obviously attempted to use a single sign from the cuneiform syllabary to indicate a phonetic equivalent of the more familiar Ugaritic sign. The tablet may have served in effect as a page in an Akkadian grammar. At all events, it is a school text.

The most striking feature of the Babylonian transcription is the variety in the vowels chosen. Some have thought that the lack of systematic notation is due merely to the carelessness of the scribe in treating the vowel. But it must be confessed that one would expect a heavy preponderance of *a*-vowels (just as in Arabic), or conceivably, *i*-vowels, or *u*-vowels. There is no reason integral to the Babylonian system which dictates the apparently careless choice. William W. Hallo has suggested that the cuneiform renders names of the Ugaritic signs, or, more precisely, that originally " the pattern consonant plus (any) vowel was a sufficient name for any letter." [17] It is not impossible that the old names had been simplified locally to syllables of a single consonant and vowel.[18] A tendency toward simplification can be recognized in most derivatives of the Phoenician script, notably in North Arabic, and in the daughter alphabets of Greek. Normally, however, this requires a long evolution, and in fact is incomplete in all the Semitic scripts.[19] More decisive. mnemonic or rhyming devices are always present in such simplified letter names: thus, *ba ta ṯa . . . ḫa ḫa*, etc., in Arabic,[20] *mû, nû* in Greek, *'ē, pē* in Syriac, and so on. The recitation of the alphabet by young scholars inevitably creates such patterns where the letter names become meaningless. But the vowels in the cuneiform transcription exhibit no

[16] We have taken liberties with the editor's transcription only to bring them into line with a more conventional notation.

[17] *Op. cit.*, pp. 335, 336.

[18] Hallo, under the influence of Gelb's hypothesis, assumes, actually, that the traditional names were introduced secondarily. But such a view is not consonant with the evidence cited above.

[19] In English, with the shift of *zed* to *zē*, after the prevailing pattern, the process is virtually complete.

[20] As well as *dāl, ḏāl; ṣād, ḍād; 'ayn, ġayn*; in which the second of each pair is secondary.

pattern, no apparent mnemonic device. In short, we must reject a hypothesis which proposes that a letter name could consist of a consonant plus *any* vowel; a letter name may consist of a consonant plus a determinate vowel, and normally in rhyming patterns or reflecting principles of euphony acquired in repetition.[21]

The apparent haphazard aspect of the Babylonian transcriptions is capable of explanation, we believe, only if it is recognized that the cuneiform represents consonant plus the first vowel of the primitive (i. e., traditional) letter name.[22] The primary barrier to the immediate recognition of this principle in the tablet has been merely the habit of thinking of the names in their later forms.

The following lists present a provisional reconstruction of the list and letter names of the fourteenth century B. C.:

'a	b	g	ḫ	d
a	*be*	*ga*	*ḫa*	*di*
'alp	*bêt*	*gaml*	*ḫarm*	*dilt*
h	w	z	ḥ	[ṯ]
ú	*w(u)*	*ze*	*ḥe*	*ṯe*
hū	*wô*	?	*ḥêṯ*	*ṯêt*
[p]	ṣ	q	r	ṱ
pu	*ṣa*	*qu*	*ra*	*ša*
pū	*ṣadê*	*qōp*	*ra'š*	*ṱann*
ǵ	ṭ			
ḫa	*tu*			
?	*tô*			

[21] Because Hallo has introduced the words *ṣw* and *qw* of MT Isa. 28: 10, 13 as evidence for the originality of consonant-plus-mnemonic vowel as opposed to the traditional letter names treated in this paper, several remarks are in order concerning the passage in question. First and most important, DSIa clearly has *ṣy lṣy* for MT *ṣw lṣw*, a variation which not only throws serious doubt on the received text but also, if correct, would vitiate most of the arguments adduced by Hallo of an alphabetic interpretation, following R. H. Kennett and G. R. Driver. Second, it is difficult to divorce the syllables *ṣw/ṣy* and *qw* of these verses from the words *qyḥ* and *ṣ'ḥ* of verse 8, which is apparently an integral part of this particular discourse (cf. the Syriac, which follows this relationship through in its rendering). Even if this juxtaposition is a product of chance, the interpretation of these syllables as letter names does not commend itself by overwhelming appositeness. It is without ancient authority, and its strains the text at other points. For example, the translation of *z'yr* as "lad" is strictly *ad hoc*, for the word is attested only once elsewhere in Biblical Hebrew in the probable sense of "a little while." Because of their general obscurity, therefore, we should object to the introduction of these verses as data in the alphabet problem.

Hallo's further suggestion that the words *gaw*, *wāw*, and *tāw* are extensions of mnemonic letter names and have no legitimate etymology seems rash in view of our general ignorance. What little evidence we do possess would support the opposite contention. Hebrew *gaw*, and the closely related form *gēw*, can hardly be separated from *gewiyāh* or from the etymological family which includes Aramaic *gaww-* and various other cognates. Angles, after all, have interiors as well as exteriors, and plausible semantic connections between these words are not at all difficult to reconstruct. Similar remarks could be made for *tāw*; the very peculiarity of *wāw* and its retention as a letter name could be claimed to speak in favor of its authenticity.

[22] The writers each came to this explanation while working independently in

A number of the names require no explanation; their forms are normal for Canaanite in the Late Bronze Age: *'alp*, " ox "; *bêt*, " house "; *gaml*, " throwstick ";[23] *ḥarm*, " netting "; *pū*, mouth; *ṣadê* (meaning uncertain); *qōp* [24] (meaning uncertain); and *ra'š* " head." [25] These eight appear in forms which have been predicted. Another two, *z* [26] and *ġ* fell out of the twenty-two letter alphabet, *z* replaced by *ḏ* > *z*; *ġ* by *ʿ*. Both signs are very rare in extant Proto-Canaanite inscriptions; hence their names cannot be reconstructed. The remaining seven of the seventeen require special comment.

The expected name of *d* is *dalt* or *dilt*.[27] However, the pictographs seem to represent *d* as a fish,[28] if the contexts we possess are correctly deciphered. It is not unlikely, therefore, that a change of name took place early, or indeed, that alternate pictographs developed in the early period. We cannot trace the development of *ḏ* in detail.

The letter *h* is difficult. The pictograph reflects a man in the gesture of entreaty or prayer. But no etymology is especially helpful. Ethiopic has the name *hōy* (not based on any inner Ethiopic pattern), and a form **hū* / **hī* > *hê* is plausible if not at all certain.

The uncontracted form *waw* presumably in certain dialects would become *wô*; in any case, this law operates in most Canaanite dialects in the Late Bronze Age. One hesitates only because of the lack of a certain etymology and of a pictograph for *w*. The cuneiform sign, of course, can be rendered *wa* / *wi* / *wu*; the reason for choosing *wu* (i. e., **wó* < *waw*) rather than *wa* (i. e., *waw* < **wawẃ*) is to bring *w* in conformity with **tô* < *taw*, rendered in cuneiform by the unambiguous sign *tu*.

The transcription of *h* by *ku* is most difficult. The problems raised are not occasioned by the failure of the transcriptions to fit into the pattern of the letter names. If one follows the editor's sequence *ku*, *ṭé*, the vowels themselves offer no trouble. *Ḫu*, *ṭe* for **ḥôṭ*, *ṭêt* is paralleled precisely in the Ethiopic sequence *ḥawt*, *ṭayt*, becoming by rhyming, *ḥêt*, *ṭêt*. However, the transcriptions are suspect. The rendering of the sign *ḥ* by *k* conforms to no known pattern of transcription.[29]

Cambridge and Baltimore. Since becoming colleagues at Harvard, we hasten to publish our results in collaboration at the urging of the Editor.

[23] The form, preserved in Ethiopic, has been recognized as primitive. The throwstick is, in fact, represented in the Proto-Canaanite pictograph.

[24] *Qōp* appears in Ethiopic as *qâf*, but in Hebrew and Aramaic as *qōf* or *qôf*. The Ethiopic form may go back actually to Can. **qāp*; in this case the Ugaritic form reflects the S. Can. shift (about the fourteenth century B. C.) *ā* > *ô*, and like Hebrew *yôd* < Phoen. *yōd* < Can. *yād*, reflects the outlandish origin of the name. More likely, the Ethiopic is a back formation, an exceedingly familiar one, *qōp* > *qāf*.

[25] Hebrew *rêš* < *riʾš* is dialectal (not Aramaic), and a loanword from another dialect. Cf. Ugar. *riʾš*. The name in our text is the usual Can. *raʾš*, Amarna *rūš(u)* < *râš*, preserved in the Greek *ῥῶ* < *rôš*.

[26] As it happens, *ze* may be taken to indicate *zên*, the usual Canaanite contraction from *zayn*. And it is possible that despite the usurpation of *z* by the sign *ḏ*, the name of *z* was preserved.

[27] Byforms of this type, *malk*/*milk* in Canaanite are familiar. The Hebrew appears to reflect *dalt*; Eth. *dent*, *dilt*; Greek *delta*, *dilt*.

[28] W. F. Albright has suggested that the original name may have been **digg* (> Heb. *dag*; cf. *gint* > *gitt* > *gat*).

[29] Moreover, the transcription of *ṮṬ* by *ṭí*/*ṭé* is suspect. As Albright observes this

The most natural solution, suggested to the writers by W. F. Albright, is to suppose that the Babylonian signs have been transposed in the column by an error of the scribe. In this case the sign transcribed *ku* by the editor is in fact an unclearly written DI = *ṭe*,[30] the sign transcribed *ṭí / ṭé* is actually the ordinary Babylonian *ḫe*. For Virolleaud's *ku, ṭé*, therefore, we should read *ṭe, ḫe*, representing *ḥêṭ*, (so!), *ṭêt*. *Ḥêṭ* may be etymologized to mean "fence," a suitable meaning of the pictograph, though the form of the noun is uncertain. The pictograph and the meaning of *ṭêt* are not known.

The transcription *ša* for *ṯ* remains to be accounted for. It was pointed out first by Albright that *ṯ* is represented by a composite bow in the pictographs, and that this sign developed directly into Phoenician *š*. The name is thus not connected with Heb *šēn*, "tooth."[31] Evidently, the noun form reflected in the transcription is *ṯann*.[32]

In summary: All of the transparent pictographs and etymologically fixed names of signs conform without adjustment to the Babylonian transcriptions of vowels in the Ugaritic abecedary. Certain signs which dropped out of the alphabet are uncertain, though Ethiopic appears to preserve one such primitive name. The remaining signs can be interpreted without violence to known linguistic patterns of the period, in conformity with the data of the abecedary. The tablet supplies, therefore, confirmation of other evidence that the names of the Proto-Canaanite signs as well as their order are at least as old as the fourteenth century B. C., and adds additional support to the view that the acrophonic principle, integral to the names of the signs, went back to the invention of the script.

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value, read by the editor, is Assyrian, not Babylonian, and would be unparalleled at Ugarit.

[30] The sign read by the editor as *ku* is by no means a normal Babylonian *ku*. On the contrary, it is very like *ṭi/ṭe* (*DI*) in which the initial corner wedge is defectively made; cf. the MB forms given by Labat, *Man. d'épigr. akk.*, p. 204. Albright writes (letter of 16 October, 1960), ". . . if one examines the sign in line 9 of the tablet, Pl. II, under a glass, it turns out to be identical with the DI in line 5 except that the two wedges on the left have coalesced to form a smooth curve toward the right. No such curve could be formed by a stylus of normal shape at the end when used to impress a single upright wedge. Furthermore, the shadow of the corner wedge at the left actually appears on the half-tone . . ."

[31] Sem. *snn*, not *ṯnn*.

[32] Earlier, it had been proposed by one of the writers to vocalize **ṯinn* > *šin* (Cross, BULLETIN 134, pp. 19, 24, n. 32). Evidently, the name shifted after *ṯ* and *š* fell together, and the *š*-sign developed its peaked or toothed appearance (after the twelfth century B. C.).

THE ANCIENT AGRICULTURAL REMAINS OF THE CENTRAL NEGEB: METHODOLOGY AND DATING CRITERIA *

PHILIP MAYERSON

In BULLETIN 153 the present writer ventured a more plausible theory regarding the *teleilât el-'anab* than previously suggested: namely, that the conical heaps and gravel mounds were the result of excavations of pits and ditches in which vines were mainly planted and that the "flowerpot" heaps found on the very stony *hammadas* were built to put a sterile area to the same use.[1] He supported this theory by citing possible analogies in the Mediterranean region; of particular significance were the citations from Apulia where aerial photographs revealed patterns similar to those found in the Negeb. He also entered demurrers against the theories for which parallels could not be found elsewhere in the ancient or modern world and against those views which pictured the desert farmer as a soil and hydrographical engineer.

President Glueck in BULLETIN 155 continued to support the efficient-runoff theory advanced by a team of scientists from the Hebrew University. This theory maintains that the ancient farmer cleared stone from the surface of the *hammada*-covered slopes so as to decrease the rate of infiltration and to increase surface runoff to the terraced lands and cisterns below.[2]

Early in 1959, members of the Hebrew University and of the Israeli Soil Conservation Department conducted a series of experiments to prove the validity of the efficient-runoff theory. Although the results have not yet been published, a communication reached me in July of 1959 from

* We wish to thank an anonymous donor for generously defraying the extra cost of engraving in this paper.

[1] Glueck's objection to this view overemphasizes the fact that the vines received hand irrigation (BULLETIN 155, p. 5, n. 9). My main point in connection with the pits and ditches is that they formed collection basins *primarily* for rainwater. If supplementary hand watering were necessary, as might be the case in the event of a severe drought, any water applied by hand would be concentrated near the roots of the plant. This would be the case regardless of where the vines were planted. I also did not mean to imply that vines were planted exclusively on the slopes. Some were undoubtedly planted in *wadi*-beds, but if they were planted in *wadis*, particularly *wadis* which drained large areas, the farmer ran the risk of losing his vines in a heavy flood. Whatever vines or trees were planted must have been planted in small tributaries or on the flats to the side of major *wadis* where the ancient farmer could exercise some control over the flood water. As to the satisfactory soil-water properties of soils in the Negeb, see S. Ravikovitch, *Desert Research Proceedings* (Jerusalem, 1953), pp. 415, 420-421, 477.

[2] While Glueck subscribes to the view advanced by Tadmor, Evenari, Shanan, and Hillel (*Ktavim*, Vol. 8:1-2, p. 135; Vol. 9:1-2, pp. 120, 122), his latest explanation of the function of the *teleilât* differs somewhat from the one offered by the Hebrew University's scientists. Glueck very broadly states that the *teleilât* and their associated rows of pebbles were used "as a means to help catch and lead rainwater from hill slopes to terraced fields alongside or in wadi-beds." (BULLETIN 155, p. 4, n. 6; cf. *Rivers in the Desert*, p. 219). We also note that Glueck apparently limits the term *teleilât el-'anab* to conical heaps, whereas I and others have been using it as a general term for several kinds of stone heaps (see BULLETIN 153, pp. 20-22).

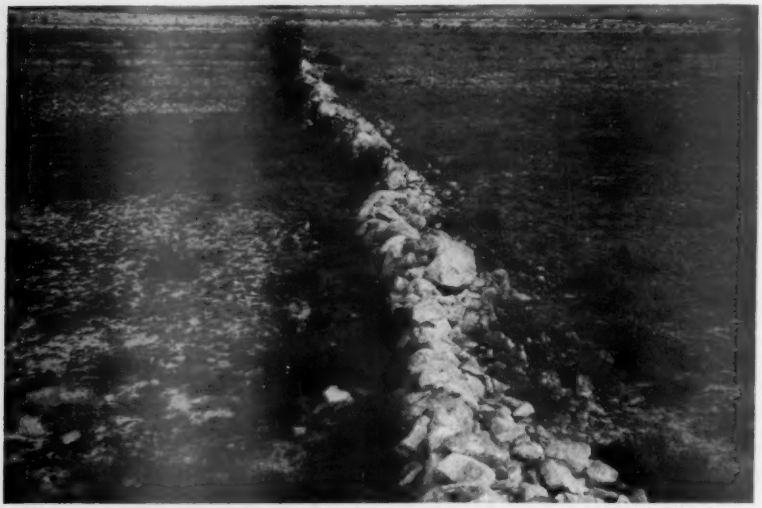

FIG. 1. A Bedouin terrace wall in the Wadi Birein. Note mild gradient of wadi.

FIG. 2. Ancient terrace wall (A), partly covered with silt, in the Wadi Birein and rough Bedouin wall (B) behind.

a prominent member of the Soil Conservation Department who has been kind enough to allow me to quote the following paragraph:

"To imitate rainfall a sprinkler system was set up. The rain imitation was done at night to minimize the effect of wind on distribution. Then in a series of five experiments, at various intensities, it was proven beyond doubt that an undisturbed *hammada* gave much more run-off than an adjoining piece of ground that was bared of its upper stone cover. The exact percentages have not yet been published, but they range from 100% to 200%."

These results are, of course, tentative and we await their confirmation and elaboration by the sponsors of the experiments.[3] Yet, had these

FIG. 3. Bedouin construction on top of an ancient terrace wall (lower 40 cm.) in a small wadi SE of Nessana. Note similarity in construction, but the difference in patination between the upper and lower portions of the wall.

experiments proved that cleared *hammada* did in fact increase runoff, they still would not have proved conclusively that the *teleilât* were the result of a conscious effort on the part of the ancient farmer to increase runoff. They would only have proved that it was *scientifically demonstrable* to increase rates of runoff by clearing surface stones from the *hammada*.

At this juncture, our interest is not so much in the function of the stone heaps as in general methodology. In dealing with ancient agricultural remains and their functions, we are fortunate that methods of working the soil have changed little since the beginning of recorded

[3] Smaller experiments were undertaken in connection with Kedar's soil-erosion theory (BULLETIN 153, pp. 24-25). The results were likewise negative.

history. The soil has to be tilled, the seed planted, and an adequate supply of moisture provided. Modern science has done little to change this formula; it has only changed the tools. In more backward areas, the methods and tools have remained so static and unchanged that in observing the present-day farmer at work we are seeing, with but minor differences, the ancient farmer meeting the handicaps imposed on him by topography and climate.

FIG. 4. The fenced-in hilltop of Site 367. Areas A and B are separated by a wall, C is a small wadi with Bedouin cultivation, D is the mouth of a Bedouin diversion channel in the Wadi Hafir, and E is a Bedouin catchment device.

In the Negeb, the Bedouin has been farming the hill region for a good number of years and, though lacking the energy and security of some of his predecessors, he uses virtually every method known to the ancients for supplementing a limited supply of water.[4] His installations, however, are not on as large a scale, nor as efficient, as those of the Byzantines and Nabataeans, but they function well enough to show us how the

[4] For a detailed explanation of these methods, see my chapter, "The Agricultural Regime of Nessana and the Central Negeb," in the forthcoming *Excavations at Nessana*, Vol. I.

ancient irrigation systems worked. In estimating the agricultural life of the Bronze and Iron Age inhabitants of the Negeb, Bedouin practices may be far more representative than those of the Byzantine period.

Further, in treating ancient agricultural practices, we must, I believe, discard the rather romantic notion that the Nabataean or Byzantine farmer possessed secret techniques which, if rediscovered, could transform the desert into a flourishing garden. The ancient installations one finds in the Negeb, while remarkable monuments of persistence and energy, only point up the limitations imposed on the inhabitants by the

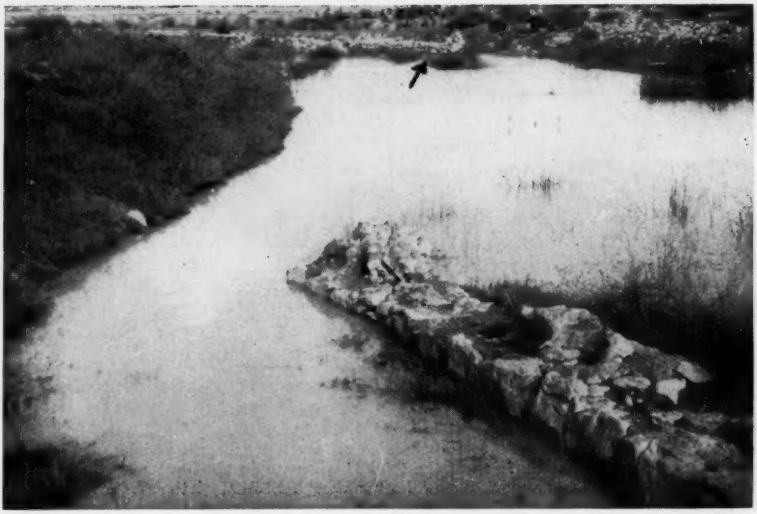

FIG. 5. An ancient diversion dam curving toward left bank of the Wadi 'Auja. Bedouin dam (arrow), a short distance downstream and paralleling the ancient, diverted water into ancient terraced plots on bank of the wadi. Water standing in wadi is a result of a medium flood which ran through wadi two days before this picture was taken.

lack of cultivable soil and a limited supply of water. Agriculture in the Central Negeb was, and is, essentially patch cultivation, or better yet, *wadi*-bed cultivation. That the Negeb at the height of its prosperity in the sixth century A. D. was still a "desert" is made clear to us by Antoninus Martyr, who travelled through the hill region on his way to Mount Sinai.[5] Antoninus, heading south from Elusa, probably towards Nessana, characterizes the region as *eremum*. By western standards, the Negeb, even in spring and at the height of its prosperity, must still have appeared to Antoninus as *eremum*.

By the same token, we should not regard the ancient agricultural practices and installations in the Negeb as in any way unique. They

[5] *Itinera Hierosolymitana*, edited by T. Tobler and A. Molinier (Geneva, 1879), pp. 110-111.

represent the necessary adjustments to the Mediterranean climatic pattern of concentrated winter rains and summer drought. The problem of equalizing these two disparate elements was common throughout the Roman Empire, and the various ways in which the problem was met are to be seen in the ancient literary works bearing on agriculture, and in the extant remains in the Negeb, Eastern Palestine, and North Africa. The comments of Stevens on the Mediterranean climatic pattern are most appropriate here: "This zone of summer drought comprises the area of the whole Roman Empire, if its northern prolongation into Gaul and Britain is excepted; indeed, to a geographer, there is no more remarkable aspect of Julius Caesar's career than his extension of the Roman Empire into a climatic area distinct from it. For elsewhere the climate has homogeneity, and while the mass of ancient agricultural doctrine is concerned with Greece and Italy, modern observations reinforced by hints of ancient authors allow us to establish general principles valid throughout the Mediterranean region." [6]

If the comparative method has any validity when applied to agricultural practices, we should, therefore, use the whole Mediterranean region, ancient and modern, for our laboratory. Any other region having similar topographical and climatic characteristics—South Arabia, in particular—should also be taken into consideration in trying to establish the ways in which the ancient farmer was able to sustain himself in the desert. Observations on the function of the remains in the Negeb which cannot be supported by current practices in the region, or supported by analogies in other parts of the world with similar topographical and climatic characteristics, must be regarded as speculative.[7]

[6] *Cambridge Economic History* (Cambridge, 1941), p. 89.

[7] It is difficult to subscribe to the theories set forth by Glueck and by the Hebrew University team on the function of the *teleilât* when we do not have a single parallel, ancient or modern, to support them. As for the possibility of the *teleilât* being an invention of the Nabataeans, as Glueck suggests (BULLETIN 155, p. 7), we should reasonably expect to find substantial evidence of their use in Nabatene east of the Wadi 'Arabah. As far as I know, *teleilât* have never been reported from that region. Similarly in connection with Glueck's Sites 346 and 367, we should expect to find other examples in the Negeb where fenced-in hilltops were employed as catchment areas (BULLETIN 145, pp. 19-20; 149, pp. 9-15; 152, pp. 21-25; 155, pp. 4-8). In the absence of further evidence in the Negeb itself, or in other areas of the Mediterranean, we must suspend judgment with respect to their agricultural function. I had examined Site 346 in the winter of 1957 and had satisfied myself that the wall had no connection with the surrounding fields and had no hydrographical function. Bedouin, however, had breached the wall at one point where a channel led water from the hilltop into a small open reservoir at the foot of the hill. At the time I visited the site, the reservoir was filled with water. I had no doubt that the channel—a crudely excavated ditch with its debris heaped on the downhill side—was recent; it was in good condition and the debris had the appearance of having been recently excavated (cf. Fig. 7). As for Site 367, although I had examined the area but not the enclosure, the aerial photograph (Fig. 4) clearly shows that the fenced-in area was bisected by a wall which must have prevented water from being collected from the entire area. Area A on Fig. 4 apparently slopes in a direction contrary to that of Area B, as one can see by the breaks in the wall (marked with arrows) and the obvious Bedouin catchment device (E) which led the runoff of Area A into a small wadi (C) cultivated by the Bedouin. Note that the Bedouin diversion dam (D) which led water from the Wadi Hafir into a *bustân* within the ancient

While we are fortunate in being able to explain the agricultural function of most of the field structures in the Negeb, it is a far more difficult problem to date them or to establish the criteria by which we may reasonably distinguish a Nabataean wall from a Byzantine, or an Iron Age wall from a Nabataean. For the most part we are dealing with

FIG. 6. Bedouin diversion channel, a continuation of the dam shown in Fig. 5. Note how well it is constructed and the use of heavy wadi boulders to protect channel against scouring by heavy floods.

humble field remains which have a uniformity and anonymity resistant to identification. This uniformity is true not only in the Negeb but in other parts of the world where agriculture is an individual or family affair; it is quite different when farms or estates are under the control of a central authority with a sizable labor force at its command.[8]

terraced plots on the banks of the Hafir, undoubtedly duplicates the ancient method of irrigating the terraced area (Cf. Figs. 5 and 6). It is also interesting to compare Glueck's photograph taken in 1957 or 1958 (BULLETIN 149, Fig. 2) and mine taken in 1946 to note the changes made by Bedouin farmers. All in all, the fenced-in areas at both sites are in no way typical for the rest of the Negeb, and I believe that explanations other than agricultural must be found for them.

[8] Y. Aharoni has made an attempt to distinguish differences between "Judaean" and "Roman" agricultural walls but has appropriately called them "possible differences" which "have yet to be checked where Judaean and Roman agricultural remains can be found side by side." (M. Evenari, Y. Aharoni, L. Shanan and N. H. Tadmor, "The Ancient Desert Agriculture of the Negev, III. Early Beginnings," *Israel Exploration Journal*, Vol. 8:4 [1958], pp. 235-236). However, it is worthwhile to note that the description of the "Judaean" wall construction does not coincide with that given by Cross and Milik (BULLETIN 142, pp. 8-9, 15) for the Buqê'ah, where masonry characteristics offer strong support for an Iron Age date.

The Colt papyri make it clear that the farm lands of the Negeb in the sixth and seventh centuries A. D. were for the most part privately owned,[9] and it is likely that the same was true in earlier periods of occupation, or at least that there was no high degree of agricultural organization by a central authority.[10] The size of the stones in the field walls reinforces this point more convincingly, for in most instances they are small enough to be handled by one man, or at most by two. The

FIG. 7. A Bedouin channel cut into a hillslope near the Wadi Isderiyeh. Such channels, which lead water into the fields and cisterns, are often mistaken for ancient.

ancient farmer, having to rely on his own hands, was compelled to resort to the double-line wall (i. e., two walls of uncemented stone with the space between the walls filled with earth and gravel), which is the most common type of ancient structure one finds in the Central Negeb (Fig. 8). It is a simple method for a small farmer to build a strong, but not

This, of course, does not render Aharoni's observations invalid; it is only unfortunate that surface photographs, line drawings, or more detailed description of the walls were not included in both publications so that comparisons could be made.

[9] P. Colt 16, 21, 23, 24, 31, 32 in C. J. Kraemer, *Excavations at Nessana*, Vol. III.

[10] Cf. Bowen in R. LeB. Bowen and Frank P. Albright, *Archaeological Discoveries in South Arabia* (1958), Pls. 46-54, 56, where the size of stone used in South Arabian irrigation systems and the accompanying inscriptions indicate a far more centralized organization of agricultural lands and labor than we find in the Negeb. The same also appears to be true in the Buqê'ah (Cross and Milik, *op. cit.*, p. 15).

necessarily durable, wall.[11] Single-line walls are also found, but generally the stones are heavier and more closely fitted.

Although aerial photographs show that most tributary wadis, even the smallest, are terraced from source to mouth with transverse terrace walls, it would be a mistake to believe that all of them represent the work of ancient farmers. I have carefully examined many of these tributary wadis and have found that many terrace walls have been laid by Bedouin and that they do not lie over ancient walls. I have also questioned Bedouin who have cultivated the area, and they claim to have terraced wadis, particularly small ones, in which no walls existed before.

When one examines the terracing in tributary wadis with steep gradients, it is quite common to find that the ancient walls stop at some distance from the wadi's source. Bedouin, however, have continued terracing the wadi with low, rough walls as far as there is a bit of cultivable soil. The reason is not difficult to grasp: a considerable amount of soil has collected behind the farther ancient wall upstream, and the soil-bed is not as deeply eroded as it is farther downstream. Tributary wadis with mild gradients, and consequently not badly eroded (cf. Figs. 1 and 8), are generally filled with Bedouin walls from source to mouth.[12]

It is quite important to distinguish Bedouin from ancient walls because, as stated above, Bedouin have been cultivating the Central Negeb for many years, and they—with the effects of erosion—have blurred the ancient agricultural picture to a considerable extent. In the area around 'Auja (Nitsanah), I estimate that at least one-third to one-half of all *visible* remains in tributary wadis are Bedouin work.

Bedouin walls, in contrast with the ancient, are poorly put together. They are loosely constructed of small stone—sometimes as small as one's fist and reinforced with brush—and run in irregular lines across the wadi-bed. No attempt is made to shape the stones or to fit them closely together (Fig. 1). The color of the stone is also revealing. It has a fresh, yellowish-brown color whereas the ancient is marked by a dark brown patina. The contrast between the old and the new is most evident where walls have been repaired or where floods have broken through a terrace wall and have laid bare an earlier structure (Fig. 2). Occasionally one finds Bedouin work that is a match for the ancient; but again the distinctive color reveals its recent origin (Fig. 3).

One further difficulty in dating may also be noted. The existence of datable objects or structures (i. e., sherds, houses or forts) near a terraced

[11] See also Aharoni (*op. cit.*, p. 235), who classifies this kind of wall as "Roman," but his use of the term "Roman" is not clear. Does he use it to include the Nabataean and Byzantine periods? It is most likely that walls of this kind were used as early as the Nabataeans, if not earlier, and their use extended through the Byzantine and early Arab periods. I would not exclude the possibility that some of the "Judaean" single-line walls described by Aharoni were being used in later periods.

[12] Many of the terrace walls on Aharoni's aerial photographs (*op. cit.*, Pl. 42, Fig. 25) and on Glueck's (BULLETIN 149, Fig. 3) appear to me to be Bedouin. Photographs of the walls themselves would be helpful in determining whether they were ancient or modern.

wadi does not necessarily mean that the field remains are contemporary with the known objects nearby. For example, if one finds the remains of an Indian site near an abandoned New England farm whose fields are surrounded with old stone walls, one cannot legitimately assume that the walls were built by the Indians. In the same way, an Iron Age fort or house near a terraced wadi does not, *a priori*, date the remains to I. A. II. The Colt papyri show that one farmer might own land in a number of areas, or that he might be a resident of Nessana and farm

FIG. 8. A double-line terrace wall in a tributary wadi with a steep gradient. Floods have broken through the wall and emptied the terrace of much of its soil. At extreme left, the recessed portion of wall functioned as a spillway.

a piece of land at some distance from the town.[13] P. Colt 82 is particularly instructive, for it informs us that Nessanites, possibly those associated with the church, cultivated lands in six different wadis in the neighborhood of Bir Birein, two of these wadis still bearing their ancient names, Birein and Seram. The Byzantine farmer, therefore, not only cultivated land in the immediate vicinity of his town or village, of which there are many in the hill region, but also the fields at some distance from his home. And while it is true that these same fields may have been cultivated by the Nabataeans and their predecessors, the field walls may or may not be contemporary with Nabataean or Judaean farms, houses, cisterns, and forts in the vicinity.[14]

[13] P. Colt 16, 24, 31.

[14] Aharoni remarks (*op. cit.*, pp. 224, 238) that cisterns in the neighborhood of the Judaean forts and settlements were repaired periodically and are still in use

Bir Birein is a good case in point. On the hills near the ancient wells can be found representative remains of every period of habitation in the Negeb, yet I would hesitate to date the ancient terrace wall shown in Fig. 2 as anything earlier than Nabataean, the likelihood being that it is Byzantine.

We must bear in mind, particularly in connection with long tributary wadis with mild gradients, that silt brought down by winter floods eventually covers the ancient terrace walls and renders them ineffective, even if they had not previously been breached or completely swept away by heavy floods. Were it not so, the Bedouin would not have gone to the trouble of building completely new walls. Ancient terrace walls in such wadis cannot be readily detected on aerial photographs; what is generally seen is Bedouin work.[15]

We can be sure of ancient cultivation in those wadis where, in conjunction with terrace walls traversing the wadi-bed, we find walls on both sides of the slopes running roughly parallel to the course of the wadi.[16] Bedouin never build these walls and only rarely repair them. If these enclosure walls, as I call them, are not found, the terrace walls in the wadi-bed have to be carefully examined to make sure that they are not of recent origin.

Lacking suitable dating criteria, the question of what is Byzantine, Nabataean, or earlier cannot be satisfactorily answered. It is safe to assume, however, that most of the ancient agricultural remains belong to the time in which the Negeb was most intensively inhabited and exploited. There can be no doubt that two periods are outstanding, the Nabataean and the Byzantine. Of the two, it is generally agreed that the high point in the Negeb came during the Byzantine period, a lower peak occurring during the Nabataean.[17] I would suggest that those ancient agricultural walls which are made of roughly dressed stone, both double- and single-line construction, and which show some measure of discipline and care in their construction, be considered, for the present, " Nabataean-Byzantine," with strong emphasis placed on " Byzantine."

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today, an indication that early farmsteads were rehabilitated in later periods. (See also, Glueck, BULLETIN 155, p. 13). He also points out (*op. cit.*, p. 246) that some field walls showed repairs of a later period.

[15] See above, n. 12.

[16] See also Glueck, BULLETIN 155, pp. 3-4, n. 2.

[17] See Baly, *Palestine Exploration Fund Quarterly Statement*, October, 1935, p. 172; C. L. Woolley and T. E. Lawrence, *The Wilderness of Zin* (New York, 1936), pp. 47-52; G. Kirk, *Palestine Exploration Quarterly*, April, 1941, pp. 64-65; R. Amiran, *Israel Exploration Journal*, Vol. 4:1 (1954), p. 50; M. Avi-Yonah, *Israel Exploration Journal*, Vol. 8:1 (1958), p. 40; Glueck, *Rivers in the Desert*, p. 248. Glueck's remark (*Biblical Archaeologist*, Vol. 22:4, p. 97; *Rivers in the Desert*, p. 247) that the Byzantine period in the Negeb came to an end early in the seventh century A. D., as a result of the Mohammedan conquest does not agree with the evidence offered by Kraemer (*op. cit.*, pp. 29-35) for Nessana and by Baly (*op. cit.*, pp. 172-173) for Sbeita.

AN AMMONITE STAMP SEAL FROM 'AMMAN

PHILIP C. HAMMOND

'Amman, the modern capital of The Hashemite Kingdom of Jordan, has enjoyed a long history of occupation.[1] As Rabbath-Ammon the city was the central stronghold of the biblical Ammonites.[2] During the height of Israelite military expansion under David, the city fell to Joab, and remained briefly under Israelite control.[3] Following the disruption which fractured the United Monarchy, the Ammonites appear to have reasserted their independence. In any event, they proved troublesome to the Southern Kingdom until its fall and immediately thereafter.[4] With the Restoration, under Nehemiah, there was again Ammonite opposition to the rise of the Jewish state.[5] This conflict continued, and in Maccabaean times the Ammonites were noted among the allies of the Greeks.[6] By the middle of the third century B. C., "Rabbathammana" had been completely Hellenized and renamed "Philadelphia," after Ptolemy II Philadelphus (285-247 B. C.). The area became part of the Seleucid empire with the rest of Syro-Palestine under Antiochus III. In the first century B. C. Pompey entered the area and the Decapolis confederation, of which Philadelphia was a part, passed under Roman control, where it was to remain for some time.[7] In 106 A. D., the city became part of the Roman province of Arabia. With the rise of Christianity, Philadelphia became an episcopal seat. During the early Muslim period added prestige was gained by the establishment of a mint under the Umayyads which continued in use under the Abbasids.[8]

The stamp seal discussed below was found on Jebel Jawfeh, in 'Amman, following an excavation there.[9] The seal is oval in shape, measuring about 1.3 x 1.1 cm. It is conic in section and was cut from hard stone, turquoise in color.

[1] From the Early Bronze Age onward, as excavations on the citadel indicate (cf. G. L. Harding, *The Antiquities of Jordan*, p. 63), Wright & Filson, *The Westminister Historical Atlas*, pp. 36, 40; cf. also Nelson Glueck, *Annual*, XVIII-XIX, pp. 245 ff.

[2] *Deut.* 3:11; *Jos.* 13:25, 15:60; *Ju.* 11:4 ff.; *I Sam.* 11:1 ff.

[3] II *Sam.* 10:2, 11:1, 12:26-31, 17:27; I *Chron.* 20:1.

[4] Cf. *Jer.* 40:14, 49:2, 3; *Ezek.* 21:20, 25:5; *Amos* 1:14, I *Chron.* 5:26; II *Chron.* 27:5; II *Kings* 24:2, 25:22-6; Wright & Filson, *op. cit.*, p. 60.

[5] *Neh.* 4:7.

[6] I *Macc.* 5:6.

[7] E. Hoade, *East of The Jordan*, pp. 90-91; Polybius, V, 7, 5; Cf. *Matthew* 4:25; *Mark* 5:20, 7:31; *Rev.* 1:11, 3:7 ff.

[8] Hoade, *op. cit.*, p. 91.

[9] This seal is the property of Mr. M. A. H. Alafghany, of the Bukhariyeh Suq, 'Amman, who has most graciously permitted its publication. It is being offered for sale by Mr. Alafghany at the present time, but it was felt that the value of the seal to the study of other Near Eastern examples was such that publication should be made at this time. The photograph, also supplied by Mr. Alafghany, was taken with the kind assistance of Dr. Awni Dajani, Director of Antiquities of Jordan.

Courtesy of the Department of Antiquities,
The Hashemite Kingdom of Jordan.

The seal has two lines of script, separated by double lines and enclosed by an engraved border. The engraving seems to have been done with a wheel, since the line ends are more rounded.[10] The reading of the two lines is as follows:

L'W'B
NMR'L

" Belonging to *'W'*, son of *MR'L*."

The medial letter of the first name in the upper register is difficult. The enlarged photograph clearly indicates a difference from the *nun* of the second line. Since the seal is in a perfect state of preservation, it is impossible that part of the letter was effaced, as in the case of an imperfect sealing. What appears to be a possible down-thrust leg below the upper arm of the letter (thus suggesting a *kaf*) proved, upon microscopic examination of a cast of the original impression, to be a crack or flaw in the stone surface, not an engraved line. Hence *waw* seems inescapable. The form of the second *aleph* of the name varies a bit from the first occurrence and also from the occurrence in the second line, but it would seem to be a safe reading. Such a reading, however, appears to represent a new (Ammonite) entry in the onomasticon of personal seal names. The nearest biblical name is that of the Midianite King, Evi (*'Ēwî*).[11] Possibly a relation may be seen in the root, in Hebrew, Aramaic and Syriac, meaning " friend," " ally," " desirable," etc., from an original meaning " to turn toward."[12] Prof. W. F. Albright, in private correspondence, has suggested a hypocoristic form, indicated by the final *aleph*, of a name like 'Aus'il. The word used for " son " here (*ben*) is no decisive factor, since it was common in Semitic usage.[13] The second

[10] A. Reifenberg, *Ancient Hebrew Seals*, p. 11.

[11] *Num.* 31:8; there is to be noted also the connection between this king and Sihon, king of the Ammonites, and the relation of the latter to Ammonite territory, as seen in *Jos.* 13:15-21 and *Ju.* 11:12-28.

[12] √'W' / 'WH; Reifenberg, *op. cit.*, p. 11.

[13] Cf. A. Harris, *A Grammar of The Phoenician Language* (*ben* as Heb. and Phoen., *bar* as Aramaic), and the Beth Mesheko letter from Murabba'at, where *ben* and *bar*

name on the seal is also of interest. Its reading is quite clear. The use of *'l* in the compound is quite common in personal names throughout the ancient period. This generic term for deity does not assist in assigning the seal to any specific national group, however, as might be the case in the use of a specific divine name.[14] The initial part of the compound is more determinative, however. Here the possibility exists of at least two readings: the simple *MR*; or *MR'* with a final and an initial *aleph* indicated by a single letter in the orthography, thus making the compound read MR(')'L. The simple word *MaR* does not occur in Hebrew in the sense of its later Semitic use, "lord," or "master." Harris[15] cites a couple of late "Phoenician" occurrences as a divine name in compounds, and a few other isolated examples originate from Gaza, Tyre and the Hauran.[16] The major usages of the word are in Aramaic and Syriac, going into Sabaean, Nabataean, Palmyrene and related forms.[17] It is in Aramaic that the main development of the word is most evident. In the Aramaic of Elephantine the word is extremely common, in the sense of deity,[18] as a civil title or sign of deference,[19] as a polite social form,[20] and to denote ownership.[21] In biblical and Targumic Aramaic there is frequent occurrence of the word, but the uses are similar: namely, to indicate lordship (including divine) and ownership.[22] Nabataean usage, mainly from Hegra and the Hauran, includes royal application (as a title), religious and civil appellations, divine lordship and various compounds.[23] In Syriac the word continues the applications already seen: in reference to Deity; as a general form of respect; as an ecclesiastical title; to denote ownership or possession; and in the construct relationship of description. By this time a special form had evolved for specifically religious lordship.[24] The word thus ultimately slipped into

both occur in personal names of the second century A.D.; Reifenberg, *op. cit.*, pp. 15-16.

[14] Reifenberg, *op. cit.*, pp. 15-16.

[15] Harris, *op. cit.*, pp. 121-22—MRYḤY and MRṢMK, from the 4th-3rd Cent. B.C.

[16] G. A. Cooke, *A Text-Book of North Semitic Inscriptions*, p. 65—Βεελμάρι on a Tyrian lamp (*Rev. Arch.* XXIX, 267), Μάρνας of Gaza (better מרנא, cf. citations of Brown, Driver and Briggs, *A Hebrew and English Lexicon*, p. 1101), and the Λιὶ Μάρνα τῷ Κυρίῳ of Waddington (2412 g), and p. 109.

[17] Esp. J. Cantineau, *Le Nabatéen*, II, pp. 117-8.

[18] A. Cowley, *Aramaic Papyri*, p. 207 and Papyrus 30:15 (408 B.C.).

[19] *Idem*, Papyri 16.8 (c. 435 B.C.); 37.1, 17 (c. 410 B.C.); 38.2 (before 411 B.C.); 27.2, 10, 19, 21 (c. 411 B.C.); 17.1, 5 (428 B.C.); 30.1, 2, 18, 23 (408 B.C.); 31.1, 17, 22 (408 B.C.); 33.7 (407 B.C.); 34.6 (?) (407 B.C.); 47.2, 7 (Persian title); *Aḥikar*, 73.

[20] *Idem*, Papyrus 39.1, 2; 54.10; 70.1; 77.1; 39.5 (female)—all n.d., along with *Aḥikar*, 192, 198, 199 (c. 430-400 B.C.).

[21] *Idem*, Papyrus 34.6 (c. 407 B.C.), and see also various times in the legal fragments—Papyri 67.7; 68.9; 80.9; along with 27.2.

[22] *Targ. Onk. Ex.* 15:3 (for אוּשׁ); *Dan.* 2:47; 5:23; and the Qere to *Dan.* 4:16, 21—so H. Bauer and P. Leander, *Kurzegefasste biblisch-aramäische Grammatik* (from the influence of later Judaic-Palestinian Aramaic), p. 31. *Targ. Onk. Gen.* 4:20 (for בעל); *Targ. Onk. Ex.* 21:28, 29.

[23] Cantineau, *op. cit.*, pp. 117-8.

[24] Note here *maryâ* for the usual *mârê*.

the New Testament from Aramaic, in a formulaic frame, the meaning of which, apparently, was soon lost.[25]

The form *MR'* was called to the writer's attention by Dr. Albright, because of the Lihyanite occurrence of *MR'L*, identical with the form on the seal, as noted above. This form would mean "Man of El," and would be quite compatible with the masculine form preceding it. Albright suggests North Arabic origin for a number of names on Ammonite seals, and points to the desert-edge location of 'Amman as the logical reason.[25a]

In view of the probable chronological place of this seal, and the relative lateness of the simple *MR* forms, an original *MR' 'L* > *MR'L* would seem to be preferable.

The style of this seal is a common one, and a large number of seals can be compared with it, from a variety of sites.[26]

Exactitude in epigraphic parallels is subject, to some degree, to the vagaries of the engraver's skill, especially in the case of seals. However, some features of certain letters would seem to indicate their general chronological relationship. In this regard, the forms of *lamedh*, *beth*, *mem* and possibly *resh*, are perhaps more critical than the *waw* (?) of the first line and *alephs* of both lines.[27]

On the basis of both stylistic and epigraphic considerations, the dated parallels to this seal range from the 8th to the 6th century B. C. When other Ammonite seals are taken into consideration as well, it would seem that this seal probably can be dated in the vicinity of the early 7th century B. C.[28]

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[25] *I. e.* the *μαρὰν ἀθά* of I Corinth. 16:22—simple transliteration into Greek.

[25a] [This name appears in various forms in the early North-Arabian inscriptions between the fourth century B. C. and the second or third century A. D. The most correct spelling is *MR"L*, i. e. *Mar'u'il*, "Man of Il," Thamudic in Jaussen & Savignac, *Mission archéologique en Arabie*, No. 511. The contracted form *MR'L*, spelled just as in this seal, appears in Early Lihyanite from about the fourth-third centuries B. C. in Jaussen & Savignac, No. 203; cf. Werner Caskel, *Lihyan und Lihyanisch* (1954), p. 149. The parallel form *MR'LH*, *Mar'ilâh*, is common in Lihyanite and Thamudic; cf. Caskel, *loc. cit.*, A. van den Branden, *Les inscriptions thamoudéennes* (1950), p. 536, G. L. Harding and E. Littmann, *Some Thamudic Inscriptions* (1952), p. 55. On the mixture of Arabic and Canaanite/Aramaic elements in Ammonite culture and nomenclature see my discussion in "Notes on Ammonite History" *Miscellanea Biblica B. Ubach* (Montserrat, 1954), pp. 131-136.—W. F. A.]

[26] Sabatino Moscati, *L'epigrafia ebraica antica*, Plates XI 10-11, XII 9, XIII 2, 10, 12, XIV 1, 2, 4, 6, 8, XV 7, 9, XVI and XVII. Reifenberg, *op. cit.*, Nos. 20, 21, 22, 23, 24, 36, and pp. 17, 19. M. A. Levy, *Siegel und Gemmen*, II, 8; III, 2, 4, 11, 12, 15; de Vogüe, *Recueil de Travaux*, p. 113 ("Judaic style"); Harding, *op. cit.*, pp. 44-5 and Plate 4. *Ain Shems*, fig. 10a, Nos. 8, 9, 10.

[27] For *lamedh*, cf. Moscati, *op. cit.*, Plates XII 9, 11, XIII 6, XV 3; Levy, *op. cit.*, II 4, III 7, 7a, 8, 9, 14, 15; W. F. Albright, *Tell Beit Mirsim, I*, fig. 12, Nos. 4, 5, *T. B. M., III*, Pl. 60, Nos. 3, 4, Pl. 29, Nos. 8, 10; *Ain Shems, V*, fig. 10a, Nos. 2, 4, 6, 7, 10; de Vogüe, *op. cit.*, No. 40; Reifenberg, *op. cit.*, Nos. 3, 6, 20, 21, 29, 37, 39; for the *beth*, cf. Levy, *op. cit.*, II 3, 4; Reifenberg, *op. cit.*, Nos. 35, 40; *Ain Shems, V*, fig. 10a, Nos. 7, 9; de Vogüe, *op. cit.*, No. 14; for the *mem*, cf. Levy, *op. cit.*, II 3, 4, III 4, 7a, 12; de Vogüe, *op. cit.*, Nos. 6, 15; Reifenberg, *op. cit.*, Nos. 3, 35, 36, 40; for the *resh*, cf. No. 24, but before the more open, later, form; *Ain Shems, V*, fig. 10a, Nos. 2, 4; on the *nun*, cf. *Ain Shems, V*, fig. 10a, Nos. 3, 5, 9.

[28] Dr. Albright suggests that "a date in the 8th century (or possibly in early 7th) seems reasonable."

THE DOMESTICATED CAMEL IN THE SECOND MILLENNIUM—EVIDENCE FROM ALALAKH AND UGARIT

W. G. Lambert

Among the 15th century Alalakh tablets is a series listing rations for domestic animals. The reading of line 59 of text 269 was corrected by the original copyist, D. J. Wiseman, to:

1 šà.gal ^{anše}gam!mal!
One (measure of) fodder—camel (*JCS* XIII, p. 29)

In his notes on these texts Goetze commented, "This early occurrence of camels, missing in *CAD*, to be fed and therefore domesticated, is worthy of special note." [1] The logic of this is indisputable, but not the reading on which it is based. As originally copied the text has not one of the three signs ^{anše}*gam.mal*, as they have later been read. The first is quite different at the beginning from the other certain *anše* signs in the immediate context of this same tablet, but taken with the two following diagonal wedges, which actually join it, it is the regular form of *dàra*, as can be seen from the forms collected by Fossey, *Manuel d'Assyriologie* II, pp. 240-41. The remaining sign of the group was first read *bar/maš*; *dàra.maš* is the well known ideogram for *aialu*, "stag." [2] The new collation as given in *JCS* XIII, 33 only differs in reading *mal*, not *maš*; it has not altered the sign *dàra*. Thus the original reading gave a meaningful *dàra.maš* "stag." The correction yields a meaningless *dàra.mal*. In any case ^{anše}*gam.mal* is a pseudo-ideogram, not otherwise attested until much later Assyrian documents. The tablet itself is now in the Museum at Antakya (Antioch), and so far the writer has been unable to find a cuneiform scholar passing through who could examine it. Until a further collation can be obtained it will be unwise to use this passage as evidence of a domesticated camel, since "stag" seems the more likely reading. It should be noted that the feeding of deer in captivity is attested from this area,[3] while the whole idea of feeding rations of fodder to camels in any area or period is something too bizarre to need further consideration.

The Sumerian lexical texts from Ugarit have provided a hitherto overlooked piece of evidence concerning the camel or dromedary. The particular fragment is only known from an excerpt quoted by Salonen, based on material supplied by Nougayrol.[4] It is a precursor to the later Sumero-Babylonian list of domestic animals which forms Tablet XIII of the series Ḫarra-*ḫubullu*. The bilingual list reads:

[1] *JCS* XIII, p. 37.
[2] See E. I. Gordon, *JAOS* 77, p. 75 f., and B. Landsberger, *MSL* VII, p. 124 n. 36.
[3] B. Landsberger, *Fauna*, p. 98. Aššur-naṣir-pal II provided the venison from 500 stags, *inter alia*, for one of his banquets (D. J. Wiseman, *Iraq* XIV, pp. 35, 110).
[4] A. Salonen, *Hippologica Accadica*, p. 54.

anše.a.ab.ba = *i-bi-lu*
donkey of the sea = dromedary (*JNES* IV, pp. 174, 366)

The fragment from Ugarit has only the Sumerian of this entry. There can be no dispute that these lexical texts from Ugarit go back eventually to Old Babylonian originals from Southern Mesopotamia. The scribes of the Syrian towns were incapable of coining good Sumerian words. Here then is evidence that the dromedary was known in Southern Mesopotamia in Old Babylonian times. Since the entry is in a list of domestic animals it is very tempting to use this as evidence that it was a domesticated camel that was known. However, plausible though this is, the point must not be pressed. One wild animal does occur in the list as an exception, the *anše.edin.na* "donkey of the desert."

The very term "donkey of the sea" is revealing. So far it has seemed that knowledge of the camel reached Babylonia via the Syrian Desert. The Akkadian word *gammalu* only occurs in Assyrian texts from the reign of Shalmaneser III and onwards, and in this time it was certainly in the Syrian Desert that the beast was seen. Old Babylonian texts from the cities nearest to this desert betray no knowledge of the camel, and the term "donkey of the sea" suggests a quite different source of knowledge. "Sea" in this context can refer only to the Persian Gulf, and Oppenheim and Salonen interpreted it as "(land of) the sea." The latter tentatively suggested that Arabia might be meant by this term. There is a Mesopotamian geographical term "Sea Land," but it refers to a region bordering on the Persian Gulf, and if camels had existed here they were already in Mesopotamia, which is quite incredible in view of the complete silence of the thousands of Old Babylonian commercial and administrative documents on this creature. The only adequate interpretation of "donkey of the sea" is that it was known from across the sea, i. e. down the Persian Gulf. Perhaps then East Arabia is the region to which we should look for the domestication of the camel.

ON THE DATE OF THE LATE HITTITE PALACE AT SAKÇEGÖZÜ

George M. A. Hanfmann

A stimulating controversy has recently developed concerning the initial date of the so-called "Late Hittite" ("Neo-Hittite," "Syro-Hittite") reliefs.[1] The question of their terminal date has received less attention, yet it is crucial for the question of Near Eastern influence upon Greece. It is, of course, known that most of the "Late Hittite" palaces were destroyed by the Assyrians in the late eighth century. What is not safely known is which of the "Late Hittite" palaces existed in the

[1] E. Akurgal, *Späthethitische Bildkunst* (Ankara, 1949), pp. 139 ff.; H. Frankfort, *The Art and Architecture of the Ancient Orient*, p. 128 f., 164 ff.; W. F. Albright, in *The Aegean and the Near East, Studies H. Goldman* (1956), pp. 144 ff.; M. Mellink, *AJA* 62 (1958), p. 438.

seventh century. M. Mellink has argued that the reliefs of Karatepe should be dated shortly before 680 B. C., but her argument has not gained universal acceptance.[2] There is, however, evidence which proves conclusively that the "Late Hittite" palace at Sakçegözü was inhabited and in use in the seventh century, certainly as late as 650-625 B. C.[3]

An imported Rhodian sherd of the "Ivory Slip" factory was found in 1908 in the Jobba palace and was published by J. Garstang, W. J. Phythian-Adams, V. Seton Williams, in *Annals of Archaeology and Anthropology* 24 (1937), p. 139, Pl. 35:3. It cannot be earlier than the third quarter of the seventh century. The drawing shows part of a winged being (griffin or sphinx) walking to the left and the characteristic "Wild Goat" filling ornaments. The description states: "Brownish ware. Some grits. Core carbonized. Wet-smoothed interior. Cream slip on exterior. Light to dark brown painted decoration."[4] I shall discuss the "Ivory Slip" workshop and its chronology on the basis of the fragments found at Tarsus in H. Goldman's forthcoming publication of the Tarsus Iron Age. The evidence at Tarsus indicates that the workshop may have started in the second quarter of the seventh century, but the drawing of the piece from Sakçegözü shows it too developed to date earlier than the third quarter.[5]

Survival of the palace of Sakçegözü, presumably until the time of the fall of the Assyrian empire, provides only a *terminus ante quem* for the palace sculptures. These have always been considered late within the "Late Hittite" series, and attention has been drawn to the very remarkable appearance of a quarter-view showing both eyes in one of

[2] *Ex Oriente Lux* (*Bibliotheca Orientalis*) 7 (1950), pp. 147 ff. Cf. Akurgal, *op. cit.*, p. 147, who calls attention to other late traits. Frankfort, *op. cit.*, p. 187 considers a date of 680 B. C. more probable than one around 720.

[3] On the palace, cf. *AAA* 1 (1908), p. 97; 5 (1913), p. 72; 24 (1937), pp. 120 ff., where J. Garstang suggested that the palace belonged to the period before Esarhaddon. H. Th. Bossert, *Altanatolien* (1942), p. 74, Figs. 874-888. R. Naumann, *Architektur Kleinasiens* (1955), pp. 28, 51, 242, 374, Figs. 143 f., 203, 244, 284, 459. A scarab of the Saite period is mentioned as having been found in the palace; *AAA* 24 (1937), p. 121, n. 1. If correctly identified, it would add another proof for a date not earlier than the second half of the seventh century. A sherd "pinky cream slip white paint," Pl. 35, 2, may be Eastern Greek Orientalizing. The fragment of an Assyrian glazed alabastron is of a type well attested for the seventh century, Pl. 35, 7. Cf. for type and pattern Chr. Blinkenberg, *Lindos* 1 (1931) Pl. 44. *Clara Rhodos* 3, Fig. 29; 6-7, Fig. 116. Other sherds published Pls. 34 f. add nothing conclusive, but virtually all are paralleled in 7th and 6th century strata at Tarsus.

[4] For the Rhodian griffins cf. *Clara Rhodos* 6-7, Pl. 6, M. Robertson *JHS* 60 (1940) 16, Pl. 3b, Pfuhl, *MuZ* 3, Fig. 113. For sphinxes, S. Zervos, *Rhodes* (1920) Fig. 45. Kinch, *Vroulià* (1914) Figs. 102 f. W. Schiering, *Werkstätten orientalisierender Keramik auf Rhodos* (1957) 57 ff., Pl. 16:5. Ornament, swastika?, four lozenges: Kinch, Fig. 91, especially close, also Fig. 100. *Clara Rhodos* 4, Fig. 14; 6-7, Fig. 116 bis. Schiering, Beil 1.

[5] "Ivory Slip" pieces: Louvre, S. 1768. W. Schiering, *op. cit.*, 8, Pl. 3:2. *Clara Rhodos* 4 (1931) 42, Fig. 19. Chr. Blinkenberg, *Lindos* 1 (1931) 281, no. 977, Pl. 45, comments on the technique. Al-Mina: M. Robertson, *JHS* 60 (1940) 16, Pl. 2. Mersin: R. D. Barnett, *AAA* 26 (1940) 112, Pl. 77:4 10, 11, 12. This "Wild Goat" style factory exported its wares to Tarsus, Mersin, and al-Mina.

the figures [6]; but the sculptures have usually been assigned to the last quarter of the eighth century B. C.[7] One must seriously consider whether they are not, in fact, parallel to the Assyrian sculptures of the time of Sennacherib and Assurbanipal rather than to those of Sargon. The slighter canon and softer appearance of the figures and the "Phoenician" broad-faced type of sphinx would not contradict such an assumption. In architecture, R. Naumann has noted the resemblance to the "Upper Palace" at Zinçirli built after the destruction of Zinçirli by Esarhaddon in the second quarter of the seventh century. He also observes [8] that the Sakçegözü Palace is the only "Late Hittite" palace to use baked brick. At any rate, the find of a fragment of an Orientalizing Greek vase enhances the possibility that, like the sculptures of Carchemish,[9] the sculptures of Sakçegözü were seen by Greeks in the seventh century B. C.

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[6] D. M. Vaughan, *AAA* 21 (1934), pp. 37 ff. L. Schnitzler, *Studies D. M. Robinson* 1 (1951), pp. 252 f., was led to compare a Samian frieze of ca. 530 B. C.

[7] Akurgal, *op. cit.*, pp. 85, 144. Frankfort, *op. cit.*, pp. 181, 184, 187; L. Delaporte, *Malatya* 1 (1940), p. 38; R. Naumann, *op. cit.*, pp. 28, 138.

[8] Naumann, *op. cit.*, pp. 374 and 56.

[9] Akurgal, *op. cit.*, p. 145.

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